Appendix 1

Affordable Housing Mix

Housing Type	Affordable Rented Housing	Other Tenures		
		Shared Ownership	Other (including Discounted Market Sale where appropriate)	Total for other tenures
1 bedroom apartment	3-9%	12%	12%	20-28%
2-bedroom apartment	10-16%	8%	8%	12-20%
2-bedroom house	14-20%	0%	0%	NONE
3-bedroom apartment	NONE	0%	0%	NONE
3-bedroom house	21-29%	0%	0%	NONE
4 bedroom +	NONE	0%	0%	NONE
Total	60%	At least 20%	No more than 20%	40%

Appendix 2

On-Site Infrastructure Management and Maintenance Headline Specifications

The standards set out below are the minimum standards required by the Council for the purposes of estimating the quantum of funds required within the WACT Endowment Scheme.

A. Usage of Community Assets

1. The Community Facility is to be capable of up to 100 hours use a week (8am to 10pm per day) with supporting caretaking and cleaning.
2. All green turf sports pitches are to have a capacity of 6 hours adult use per week.
3. The Community MUGA is to be capable of 900 hours per annum including any floodlighting use.
4. LEAPs and other open spaces are to be capable of daylight usage.

B. WACT obligations

1. General requirement where relevant to the transferred assets to manage lighting, CCTV and the removal of litter, dog waste and graffiti in the main open spaces, particularly the village centre.
2. To commission play safety inspections on an annual basis.
3. To commission a professional inspection of the buildings at an appropriate frequency and in any event not less than once every five years.

C. Target replacement times for equipment and building management

1. IT equipment - 3 years.
2. External repainting of buildings - 5 years.
3. Internal decorating of buildings - 8 years.
4. LEAP equipment - 10 years or later where indicated by the manufacturer's guarantee or guidance.
5. Sports equipment (nets, goal posts etc.) - 10 years.
6. Community Facility and changing rooms equipment (other than IT) - 15 years or later where indicated by the manufacturer's guarantee or guidance.
7. Major refurbishment of buildings - 30 years for mechanical and electrical equipment and 50 years for structural elements.

Wisley Airfield

Information for Habitats Regulations Assessment

Final Report
November 2015

P14/67-2F

Wisley Airfield
Information for Habitats Regulations Assessment

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Ecological Planning & Research Ltd

Wisley Airfield
Information for Habitats Regulations Assessment

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EXECUTIVE SUMMARY

An assessment of potential effects from the Proposed Development at Wisley Airfield on the Internationally designated Thames Basin Heaths Special Protection Area (SPA) has been undertaken. Information presented in this report is to assist Guildford Borough Council (GBC) in undertaking a Habitats Regulations Assessment (HRA) of the proposals in respect of the SPA.

Consideration has been given to potential effects from increased recreational pressure, cat predation, surface water and groundwater change, and increases in noise and air pollution as a result of increased traffic movements along the A3 and M25.

Impact avoidance and mitigation measures are proposed where the potential for negative effects has been identified.

In summary, no significant residual effects are predicted to remain following implementation of the impact avoidance and mitigation measures set out. It is the conclusion of this report that GBC can find that, subject to the necessary impact avoidance and mitigation measures being delivered there will be no likely significant effect on the Thames Basin Heaths SPA as a result of the Wisley Airfield development, either alone or in combination with other plans and projects, nor will there be an adverse effect on the integrity of the SPA.

1. INTRODUCTION

Background

1.1 Wisley Property Investments Ltd (the Applicants) commissioned Ecological Planning & Research Ltd (EPR) to undertake an Ecological Impact Assessment (EcIA), as part of the Environmental Impact Assessment (EIA), of the potential implications for ecology of the development proposals for Wisley Airfield, which comprise a residential-led mixed-use development comprising up to 2,060 residential units, 8 Gypsy and Traveller pitches, up to 7,260sqm of commercial floorspace, including employment, retail / amenity uses, a potential health facility and community facilities. This will be referred to as 'The Site' herein.

1.2 In view of the nearby International level designated site for nature conservation, the Thames Basin Heaths Special Protection Area (SPA), information has been gathered in order to enable the competent authority, in this case Guildford Borough Council (GBC), to undertake a Habitats Regulations Assessment (HRA) of the proposals in view of the protection afforded to such sites under the European Directive 92/43/EEC *"on the conservation of Natural Habitats and of wild fauna and flora"* (known as the "Habitats Directive").

1.3 The Environmental Statement (ES) submitted pursuant to planning application 15/P/00012 outlines potential effects on designated nature conservation sites, including the Thames Basin Heaths SPA, as a result of the Proposed Development. This was accompanied by the *'Wisley Airfield Framework Thames Basin Heaths SPA Impact Avoidance and Mitigation Strategy'* which sets out the key principles for avoiding and mitigating potential adverse effects on the SPA. This report builds on these existing documents and provides additional detail to meet the requirements of the Habitats Regulations.

Scope of the Habitats Regulations Assessment

1.4 The Habitats Directive created a network of protected areas called "Natura 2000", which include Special Areas of Conservation (SACs), as well as Special Protection Areas (SPAs) which were originally designated under the earlier European Directive 79/409/EEC and the more recent codified version 2009/147/EC *"on the conservation of wild birds"* (known as the Birds Directive) but drawn into the Natura 2000 network by the Habitats Directive.

Relevant Legislation, Guidance and Case Law

Legislation

1.5 As mentioned above, the primary legislative protection detailing the protection afforded to International Sites of relevance to this report originates from the Habitats Directive. Articles 6(3) and 6(4) of the Habitats Directive are relevant to the development proposals in view of their potential to exert effects upon International Sites:

"3. Any plan or project not directly connected with or necessary to the management of the [European] *site but likely to have a significant effect thereon, either* ***alone or in combination***

***with other plans or projects**, shall be subject to **appropriate assessment** of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, **the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned** and, if appropriate, after having obtained the opinion of the general public.*

4. If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest." **[our emphasis].**

1.6 The Habitats Directive thus requires that a sequential approach be adopted when addressing potential impacts upon International Sites. Guidance for doing this in practice has been published by the European Commission and others, and is discussed below in paragraph 1.8.

1.7 The relevant sections of the Habitats Directive set out above are transposed into UK law by the Conservation of Habitats and Species Regulations 2010 (as amended). In particular, the prescriptions relating to "Appropriate Assessment" and the protection of International Sites in relation to the effects of development projects are transposed by Regulations 61 to 67.

Guidance

1.8 There are a number of guidance documents of relevance in relation to HRA and the development proposals at the Site. These have been taken into account, and include:

- The European Commission's "Managing Natura 2000" document (2000) which provides guidance on some of the key concepts enshrined in Article 6 of the Habitats Directive;
- The "Communication from the Commission on the Precautionary Principle" (2000a), which provides guidance on the correct application of the precautionary principle and states that it should be applied with proportionality and should not aim at zero risk;
- The European Commission's "Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites" (2001);
- The Joint Strategic Partnership Board's (JSPB) Thames Basin Heaths SPA Delivery Framework (12 February 2009), which is a non-statutory document intended for local planning authorities; and
- Guildford Borough Council's Thames Basin Heaths Special Protection Area Avoidance Strategy 2009-2016 (2010).

1.9 The National Planning Policy Framework (NPPF) (2012) also contains sections of relevance to HRA and International Sites, and this has been taken into account.

The Institute of Ecology and Environmental Assessment's Guidelines for Ecological Impact Assessment in the United Kingdom (IEEM, 2006)

1.10 Whilst the key guidance documents for the HRA process are those produced by the European Commission (EC, 2000a, 2000b, 2001), the approach taken in this document has also been carried out in accordance with the broad process advocated in the Institute of Ecology and Environmental Management's "Guidelines for Ecological Impact Assessment" 2006 (the "EcIA Guidelines").

1.11 These guidelines are endorsed by the main stakeholders in the UK planning system that have a specific responsibility for wildlife and nature conservation, including Natural England, the Environment Agency and the Wildlife Trusts.

1.12 Broadly, the EcIA Guidelines prescribe an approach that can be summarised as the following sequential process:

- Establishing the spatial extent of the Zone of Influence (ZOI) within which the proposed development is likely to exert biophysical changes upon the environment during either the site clearance, construction or operational phase;
- The identification, description and valuation (where possible) of ecological features and resources of value within that Zone of Influence (note that in this case the ecological features of relevance will be those for which the relevant International Sites were designated, and consequently of International nature conservation value);
- The assessment of the likely magnitude and significance of potential impacts that might be exerted upon those features and resources in the absence of any impact avoidance or mitigation measures;
- The development of impact avoidance or mitigation measures, and ecological enhancement measures to be incorporated into the project proposals;
- The assessment of any residual impact (positive or negative) that would remain following the application of any impact avoidance, mitigation or enhancement measures; and
- Advice on the consequent potential implications of relevant nature conservation related legislation or planning policy.

1.13 Other subject specific guidance is referred to in the relevant assessment sections in this document.

Relevant Case Law

Case C-127/02 of the European Court of Justice (ECJ) – The "Waddenzee" Case

1.14 The ECJ Waddenzee Case clarified a number of important points in relation to the correct interpretation of Article 6(3) of the Habitats Directive in particular. This clarification has been helpfully set out in Government Circular 06/05 "Biodiversity and Geological Conservation".

1.15 In particular, one of the key messages from the ECJ was that, where a plan or project has the potential to affect a Natura 2000 site, an "Appropriate Assessment" is necessary:

> *"...if it cannot be excluded, on the basis of **objective information**, that it will have a significant effect on that site, either alone or in combination with other plans and projects"* [our emphasis]
>
> [Paragraph 13 of Circular 06/05 or paragraph 44 of the Waddenzee Judgment]

1.16 The ECJ expanded upon this by saying that:

> *"...where such a plan or project has an effect on that site but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned."*
>
> [Paragraph 47 of the Waddenzee Judgement]

1.17 Further to the above the ECJ clarified that, once an Appropriate Assessment has been triggered, except in the circumstances outlined in Article 6(4) of the Directive, a plan or project can only be authorised where it will not have an adverse effect on the integrity of the Natura 2000 site, and that:

> *"That is the case where no reasonable scientific doubt remains as to the absence of such effects"*
>
> [Paragraph 21 of Circular 06/05, or paragraph 59 of the Waddenzee Judgement]

The "Dilly Lane" Case

1.18 The High Court judgment of J Sullivan in Hart DC v the Secretary of State for Communities and Local Government (May, 2008: the "Dilly Lane Judgment"), based upon an examination of EPR's ecological evidence, tested and upheld an important precedent in respect of the protection of the Thames Basin Heaths SPA. It was determined that measures built into a project that were designed to prevent impacts to the SPA, such as Suitable Alternative Natural Greenspace (SANG), could be taken into consideration when deciding whether or not an Appropriate Assessment is required, provided that successful delivery of those measures can be guaranteed.

1.19 This ruling effectively enables impact avoidance and mitigation measures to be taken into account in certain circumstances at the Screening stage of a Habitats Regulations Assessment, where they form an integral part of the project concerned and can be delivered. This is described in more detail below in view of published European guidance. Paragraph 60 of the Dilly Lane Judgement states:

> *"...if the competent authority is satisfied at the screening stage that the proponents of a project have fully recognised, assessed and reported the effects, and have incorporated appropriate mitigation measures into the project, there is no reason why they should ignore such measures when deciding whether an appropriate assessment is necessary"*

1.20 One of the key messages coming from the court was that:

> *"As a matter of common sense, anything which encourages the proponents of plans and projects to incorporate mitigation measures at the earliest possible stage in the evolution of their plans and projects is surely to be encouraged"*

1.21 And that, as rigorous assessment and scrutiny at the Screening stage is possible

> *"considering proposed mitigation measures at the screening stage under Article 6(3) would not be frustrating the purpose of the legislation by pre-empting any particular form of inquiry..."*

1.22 The Dilly Lane Judgement also shed further light on what is meant by "objective evidence" in terms of the requirements of being able to reach a conclusion that an Appropriate Assessment is not necessary, and this has been taken into account in this document.

1.23 The Judgement also clarified the purpose of SANG in terms of the way in which it functions to protect the Thames Basin Heaths SPA:

> *"The purpose of the SANGS was not to lessen the increase in visitor pressure, but to avoid it altogether by drawing some existing users away from the Heath to compensate for those new residents who might use it on occasion"*

The Habitats Regulations Assessment Process

1.24 Reference has been made to European Commission guidance on Habitats Regulations Assessment (EC, 2000a, 2000b, 2001). This guidance provides advice on meeting the correct stepwise approach required by Article 6 of the Habitats Directive. The whole process is usually referred to in the UK as "Habitats Regulations Assessment" (HRA) and is split into the following stages that are undertaken in sequence:

- Screening the need for an Appropriate Assessment;
- The "Appropriate Assessment" (AA);
- The Assessment of Alternative Solutions; and
- Assessment where no alternative solutions exist and where adverse impacts remain (also known as the test for "Imperative Reasons of Overriding Public Interest" or IROPI).

1.25 Undertaking the Habitats Regulations Assessment process is the responsibility of the decision maker as the competent authority for the purposes of the Habitats Regulations (in this case GBC as the Local Planning Authority); although it is the responsibility of the proponent of a plan or project to provide the competent authority with the information that they require for this purpose.

1.26 It is envisaged that this report will primarily be concerned with Stage 1 (Screening) and potentially Stage 2 (Appropriate Assessment) as set out above, as an objective of the assessment will be to introduce measures to address any identified potential impact at the

earliest possible stage in the design of the proposals in line with the conclusions of the Dilly Lane Case (Hart DC v the Secretary of State for Communities and Local Government (May 2008 the "Dilly Lane Judgment").

1.27 In the first instance, this report is intended to provide the competent authority under the Habitats Regulations with the information that is required in order to determine whether or not the proposals are likely to have a significant effect on an International Site either alone or in combination with other plans and projects, and consequently whether or not an Appropriate Assessment is required. Should it be considered that an Appropriate Assessment is required, then this report also aims to supply the information that will be necessary in determining whether or not there will be an adverse effect on the integrity of the International Site(s) concerned.

Preceding Plan-Level Sustainability Appraisal and Habitats Regulations Assessment

1.28 Guildford Borough Council is currently preparing the new Local Plan which will run to 2031. They consulted on the 'Draft Guildford borough Local Plan: strategy and sites' document in July 2014, and this was supported by a Sustainability Appraisal and Habitats Regulations Assessment carried out by URS.

1.29 The Screening Assessment of the URS HRA identifies that development of the Application Site could result in an increase in disturbance to the SPA and could contribute to reduced air quality due to increased traffic movements past the SPA. However the HRA concludes that sufficient SANGs can be accommodated within the Borough and specific measures to address air quality issues are set out, such that subject to the delivery of these measures *"it will be possible to conclude that no likely significant effects should occur on the Thames Basin Heaths SPA, either alone or in combination with other Plans and projects."*

1.30 The Application Site is included as a Strategic Development Site within the draft Local Plan, and draft policy allocation 66 includes for the provision of 2,100 dwellings plus employment uses. The Wisley Airfield SANG is also listed in emerging policy 116.

1.31 Notwithstanding these draft allocations, Savills have compiled further information to assist with the assessment of alternative solutions to housing delivery in Guildford Borough, to demonstrate that the Wisley Airfield site is a sustainable and essential component to the forthcoming Local Plan; this is provided at **Appendix 1**.

Conceptual Impact Assessment Model

1.32 In carrying out an assessment of the potential effects of a development proposal on an International Site, the 'source-pathway-receptor' concept provides a useful model for framing and objectively evaluating the mechanisms through which potential effects may occur, and has been employed in this assessment. **Table 1** below sets out the various parts of the model and how they relate to each other.

Table 1: Conceptual Impact Assessment Model.

Source	Pathway	Receptor
Elements of the development proposals that are likely to generate or contribute towards certain environmental effects.	Changes in environmental conditions caused by aspects of the development proposals that have the potential to affect an identified impact receptor.	The interest features / conservation objectives of the International Site concerned, and the environmental conditions required to support it.

1.33 During the assessment process, information has been gathered relating to each part of the conceptual assessment model in respect of each potential impact upon nearby International Sites. The consideration of this information will then allow GBC as the Competent Authority to determine whether or not a potentially viable impact pathway exists between the development proposals and International Sites within the Zone of Influence of the proposals.

Scope of the Habitats Regulations Assessment Report

1.34 In view of the above considerations, the scope of this Habitats Regulations Assessment Report is as follows:

- To gather information to establish whether or not the Proposed Development at Wisley Airfield is likely to contribute to a significant effect on any International Sites of nature conservation importance, either alone or in combination with other plans and projects;
- To gather information to establish, if a significant impact is likely, whether or not it would adversely affect the integrity of any International Sites;
- To recommend impact avoidance and mitigation measures, if required, to address any potential impacts identified; and
- To make recommendations in relation to the requirements of the Conservation of Habitats and Species Regulations 2010 (as amended) in view of the information collected, if possible.

1.35 A broad principle is that adverse effects should be addressed as early as possible in the HRA process. In this respect, regard has been had to the ruling of J Sullivan in the Dilly Lane case in respect of making the impact avoidance and mitigation measures an inherent part of the scheme; designing them in at the earliest possible stage in the development of the proposals.

Consultation

1.36 The Competent Authority will consult Natural England as the statutory advisor on nature conservation. In assessing the scope of the EIA for the development proposals for Wisley Airfield, consultation was undertaken with Natural England; relevant parts of their response are included below and the full response is appended at **Appendix 2**.

Applicant's Consultation with Natural England

1.37 As the statutory nature conservation advisor under the Habitats Regulations, Natural England has been consulted during the development of the impact avoidance and mitigation strategy for the Proposed Development. Their advice and comments have been taken on board in developing the impact avoidance and mitigation strategy.

1.38 An EIA Scoping Opinion was sought, to which Natural England responded with a letter, dated 23rd January 2014, appended at **Appendix 2**. In summary, Natural England requested that the ES should:

"Thoroughly assess the potential for the proposal to affect designated sites. European sites (eg designated Special Areas of Conservation and Special Protection Areas) fall within the scope of the Conservation of Habitats and Species Regulations 2010. In addition paragraph 118 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites. Under Regulation 61 of the Conservation of Habitats and Species Regulations 2010 an appropriate assessment needs to be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site. Should a Likely Significant Effect on a European/ Internationally designated site be identified or be uncertain, the competent authority (in this case the Local Planning Authority) may need to prepare an Appropriate Assessment, in addition to consideration of impacts through the EIA process."

1.39 Natural England advised that a separate section of the Environmental Statement is produced to address impacts upon European and Ramsar sites entitled 'Information for Habitats Regulations Assessment' (this document), and should include but not necessarily be restricted to consideration of the following impacts:

- *'Disturbance - Disturbance impacts on the breeding bird species for which the SPA is notified, Dartford warbler, woodlark and nightjar, should be considered during both construction and operation. This should include visual and noise disturbance resulting from construction activities, and recreational disturbance from visitors and dogs and lighting from the development during operation, and how this can be avoided or mitigated. The EIA Scoping documentation refers to incorporation of Suitable Alternative Natural Greenspace (SANG) to address the impact of increased recreational pressure on the SPA. Natural England is due to engage with the applicants on pre-application advice on this critical aspect of the proposals.*

- *Edge effects - Given the proximity of proposed housing to the SPA, urban edge effects on the site should be considered including increased incidence of heathland fires and cat predation.*

- *Hydrological pollution – impacts from water pollution via drainage and surface run-off during construction and operation should be addressed, in particular in the vicinity of the watercourse present at the northern boundary of the proposed application site near the Mount Pleasant Cottages which flows to the SSSI.*

- *Air pollution – an air quality assessment should be undertaken to establish likely impacts on SPA habitat from dust production during construction and traffic emissions during construction and operation. A clear breakdown of the air quality pollutants to be emitted by the proposals, including secondary pollutants, and those generated by any traffic to and from the works, should be provided. In addition, a full assessment should be made of the impacts of the aforementioned pollutants on the SPA. Of particular concern are the potential effects of nutrient nitrogen and acid deposition on the supporting habitat of the SPA birds. An assessment of the percentage contribution of the proposals to emissions, in terms of critical loads for nitrogen and acid deposition on the SPA, should be made. The background levels should be combined with the proposed contribution to emissions from the proposals, to produce a joint percentage or 'environmental load', also expressed as a percentage of the critical load for the SPA. The pH of the SPA and the potential buffering capacity of the substrate, should also be taken into account.*

- *In combination assessment - The impacts of the proposals will need be considered in conjunction with any other permitted/ proposed plans or projects which may impact on the Thames Basin Heaths SPA."*

1.40 A meeting was held with Francesca Barker from Natural England on 21 November 2014 to discuss measures to avoid and reduce potential impacts of the Proposed Development on the Thames Basin Heaths SPA. This was summarised in an email from Charles Collins (Savills) to Francesca Barker (Natural England) on 25 November 2014, appended at **Appendix 2**. This email summarises discussions had during the meeting regarding potential mitigation measures including:

- *"Suitable Alternative Natural Greenspace (SANG) at 10 ha per 1,000 population standard;*

- *Strategic Access Management and Monitoring (SAMM) contribution (based on the standard); and*

- *A 'SAMM Plus' strategy."*

1.41 The 'SAMM Plus' strategy was discussed as containing:

- *"Access Management Strategy (AMS) which incorporates a number of highways, education, site wardening and pedestrian and cycle measures (references to the Wisley & Ockham Way ("WOW"))."*

1.42 Francesca Barker replied via email on 2 December 2014, appended at **Appendix 2**. This email included the following statement:

"I can agree that your email provides a brief overview of potential mitigation options that we discussed for the Wisley development. However, we are unable to comment on the acceptability of these proposals until they have been assessed under the Habitats Regulations."

1.43 A site meeting was held with Francesca Barker, Pippa Langford and Graham Steven of Natural England on 28th November 2014, wherein key principles of a bespoke Impact Avoidance and Mitigation Strategy were discussed. The notes of this meeting are appended at **Appendix 2**, and were confirmed to be an accurate representation of the meeting by Francesca Barker via email dated 2 December 2014.

1.44 Natural England has reviewed previous drafts of this report, in addition to the SANG Management Plan, through their Discretionary Advice Service (24 March 2015 & 26 June 2015) and comments received have been fully considered as part of further refinement of the impact avoidance and mitigation strategy.

2. CHARACTERISATION OF THE PROPOSED DEVELOPMENT

Introduction

2.1 Guidance from the European Commission indicates that the first stage of providing the information that is necessary for a competent authority to undertake the HRA process is for all those aspects of the subject project or plan, which either alone or in combination with other plans and projects have the potential for having a significant effect on an International Site, to be identified and characterised.

2.2 Undertaking such a systematic characterisation in respect of the Proposed Development at Wisley Airfield will enable the various aspects of the project to then be related to the particular sensitivities of the Thames Basin Heaths SPA, so that the potential ways in which the former may affect the latter can be examined.

Relevant Details of the Proposed Development

2.3 Information about the Site, including its location and context with the Thames Basin Heaths SPA, and about the Proposed Development is set out below.

Site Location and Context

2.4 The site of the proposed development lies entirely within Guildford Borough in the County of Surrey. It is located in the Lovelace Ward and is situated to the north of Ockham and south of the M25/A3 Junction (**Map 1**).

2.5 The site boundary encompasses an area of approximately 114.7 hectares and comprises a disused airfield and areas of farmland, scrub and woodland. To the north of the airfield lies Ockham and Wisley Common, to the west the A3, to the south the village of Ockham and to the east Old Lane.

2.6 The airfield was built in 1944 for the testing of aircraft built at the nearby Brooklands factory. It was used during the Cold War and was closed in 1972. The airfield is no longer in operation, although the runway and large areas of hard-standing still survive. Most buildings have been demolished. An air traffic navigation beacon is present in the south-east corner of the site.

2.7 A portion of the site has planning permission for the construction and operation of an 'In Vessel Composting' (IVC) facility (16.75 ha). 69 ha of the site has an allocation in the emerging GBC Local Plan as a new settlement and 39 ha in the north of the site has a draft allocation as SANG in the same document (Allocation 66, as described at paragraph 1.29).

Development Proposal

2.8 A description of the Proposed Development can be found in the Design and Access Statement that was submitted with the aforementioned planning application. A summary of the proposals is given below, and principal site areas are shown on **Map 2**:

"Development of a high quality, sustainable community which responds positively to the geographical, political and economic context of the site. The development will include up to 2,060 homes, 8 traveller pitches and up to 7,000 sq m of new commercial, retail, leisure and community floorspace.

There is a strategic transport plan, comprising both a public transport strategy and a sustainable transport plan to integrate the development with the local area. There will be space for shops, a GP surgery, cafe(s), an all through school and community facilities and it will be served by footpaths and cycleways offering safe and easy connections to other facilities in the surroundings.

More than half of the site will be public open space incorporating areas of existing woodland, a viewing hill and a wetland area as part of the Sustainable Urban Drainage System (SUDS). The parkland will provide a range of wildlife habitats and offers a variety of activities for the wider community.

The vision for Wisley Airfield is to deliver a development which will incorporate elements of lifestyle deemed important in the 21st century. This will include reducing the need to travel through the provision of employment opportunities on site, and facilities to support home working. Furthermore the development will require its own shared infrastructure and services, further enabling the residents to form a sustainable community. Wisley Airfield residents, as well as the wider community, will have access to local amenities, a school and community facilities as well as health facilities.

The site will bring significant improvements to the local recreation facilities, providing play areas and sports pitches and enhancing access to public space. Wisley Airfield offers the opportunity to bring about a sustainable development which will offer real lifestyle choices, brought forward and delivered by a client whose long-term view will enable the community to establish a lasting quality and appeal."

2.9 Transport mitigation measures prescribed for the Proposed Development have a particular bearing on the HRA process, since they result in modification of traffic flows within the local highway network with consequent effects on the distribution of traffic noise, car borne atmospheric pollution and accessibility of SPA car parks by car from particular directions. The measures prescribed that are of relevance to the assessment of likely significant effects on the Thames Basin Heaths SPA, and which are discussed further in **Section 5**, include:

- Proposed highways measures between Boldermere car park and Pond car park on Old Lane, restricting traffic coming from the north accessing Pond car park to the south;

- Closure of Elm Lane to motor vehicles with a new access route to Elm Corner provided through the proposed development site;
- Potential road closure on Plough Lane north of the M25 at Pointers Green; and
- Potential road closure along Ockham Lane adjacent to the site access.

2.10 **Appendix 3** also contains plans produced by WSP illustrating the proposed modifications.

Definition of the Zone of Influence (ZOI)

2.11 Defining the potential Zone of Influence of the Proposed Development is a two-way process involving the following two considerations that must be investigated in parallel:

- The likely spatial extent of any biophysical changes that might be exerted by the Proposed Development on the surrounding environment; and
- The particular sensitivities of relevant International Sites in terms of whether they are likely to be affected by any such biophysical changes (this consideration must be made in relation to the features for which the International Sites were designated, their "conservation objectives", and the environmental conditions that are required to support them).

2.12 Potential biophysical changes that could be caused by the Proposed Development during the construction and operation phases that might lead to ecological impacts beyond the Site boundary are considered to be:

- Introduction of new residents resulting in an increase in public access and recreational pressure during the operation phase, with the potential to increase SPA bird disturbance and other urban edge effects such as increased risk of fire;
- Increased predation of SPA birds as a result of an increase in the local cat population during the operation phase;
- Noise from construction activity generated during the construction phase and noise from increased traffic during the operation phase potentially leading to disturbance of SPA birds;
- Pollution or changes in quality of surface or groundwater from liberation of any residual soil or ground contamination, and mobilisation of such substances in, and transport to, local water courses or groundwater during the construction phase potentially affecting SPA habitats and in turn SPA birds;
- Changes in the quantity of surface water or groundwater entering watercourses or aquifers during the operation phase potentially affecting SPA habitats and in turn SPA birds;
- Liberation, air transport and deposition of dust due to construction and construction traffic movements during the construction phase potentially leading to damage to SPA habitats; and

- Emissions to air of pollutants from traffic during the operation phase potentially leading to changes in SPA habitats.

2.13 In view of these potential biophysical changes the potential Zone of Influence is predicted to include much of the Site but to also extend beyond the Site boundary.

2.14 With respect to recreational pressure this may extend up to several kilometres from the Site boundary, although evidence indicates that the main effects (in the absence of impact avoidance measures) would occur within 5 km of the Site (Liley et al. 2005; Fearnley & Liley, 2012; JSPB, 2009).

2.15 The Thames Basin Heaths SPA Delivery Framework (JSPB, 2009) prescribes a 400m housing exclusion zone within which *"the impact of net new development on the SPA is likely to be such that it is not possible to conclude no adverse effect on the SPA"*. It goes on to state that *"In exceptional circumstances the 400m distance may be modified by local authorities to take account of physical obstructions to cat movement and human access"*. The 400m exclusion zone is therefore set, in part, by the distance within which significant effects on the SPA as a result of cat movement and consequently predation cannot be precluded. Further evidence regarding cat roaming distance is also provided within the South East Plan Assessors Report which states that "...the definition of Zone A [400m] is largely based on the average distance cats travel to hunt" (Burley, 2007). Therefore the potential Zone of Influence in respect of effects arising from increased ownership of cats within the development is anticipated to extend up to 400m from the Site boundary.

2.16 For noise the potential Zone of Influence may extend at least 200 m from the boundary of the Assessment Site during the construction phase, or 200m from highways that are anticipated to receive a significant increase in traffic during the operational phase.

2.17 For surface and groundwater, the potential Zone of Influence may extend at least as far as the limits of the relevant catchments.

2.18 In terms of potential dust emissions during the construction phase, Chapter 6 of the ES explains that dust particulates may disperse up to 350m from the point source, which therefore has the potential to extend beyond the Site boundary into adjacent International Sites.

2.19 In terms of air pollution the potential Zone of Influence may extend up to 200 m from roads where the proposals are considered to have the potential to lead to material increases in traffic and are within 200 m of International Sites.

2.20 Detailed consideration of the potential Zone of Influence in respect of each potential impact arising from these potential biophysical changes is presented at the start of each impact assessment section (**Sections 5 to 9**).

3. CHARACTERISATION OF INTERNATIONAL SITES

International Sites Considered to be Within the Potential Zone of Influence of the Proposed Development

3.1 **Map 1** shows the locations of International Sites within around 5 km of the Site, as follows:

- The Thames Basin Heaths SPA

3.2 Following a request for an EIA Scoping Opinion for the Proposed Development, GBC concluded on the advice of Natural England, that the following International Site needs to be considered further in the EIA and HRA:

- The Thames Basin Heath SPA

3.3 The citation, data sheet and a summary of the conservation objectives for the Thames Basin Heaths SPA are included in **Appendix 4**. A summary of the site and its qualifying features follows.

The Thames Basin Heaths SPA

3.4 The Thames Basin Heaths SPA covers an area of approximately 8,274.72 ha. The site is located across the counties of Surrey, Hampshire and Berkshire in southern England.

3.5 The Thames Basin Heaths is a network of lowland heathland sites, designated as a Special Protection Area (SPA) in March 2005 for its internationally important populations of three species of rare bird, Dartford Warbler, Woodlark and Nightjar, all of which are listed in Annex 1 of European Directive 79/409/EEC (the 'Birds Directive') (now codified by Directive 2009/147/EC) and nest either on or close to the ground. The SPA designation was originally created by the Birds Directive and later drawn into the "Natura 2000" network of protected areas by European Directive 92/43/EEC (the 'Habitats Directive').

3.6 Ockham and Wisley Common Site of Special Scientific Interest (SSSI) is a component SSSI of the Thames Basin Heaths SPA, covering approximately 264 ha. It is made up of nine separate units, categorised as dwarf shrub heath, standing open water and canals.

3.7 The SSSI was designated for the rich community of heathland plants and animals that is supports, including a large number of rare and local insects. The SSSI is of National importance, including specifically for dragonflies and damselflies (Odonata) and true flies (Diptera). It also supports a large colony of bog hairgrass *Deschampsia setacea* which is local in Britain and rare in Europe as a whole.

Conservation Objectives for Thames Basin Heaths SPA

3.8 The conservation objectives for the Thames Basin Heaths SPA are listed as follows:

"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."*

Current Condition of Ockham and Wisley Common SSSI

3.9 With reference to the SSSI condition assessment, 33.19% of the SSSI has been classified as Favourable and 66.81% has been classified as Unfavourable, Recovering.

3.10 The closest component units of the Thames Basin Heaths SPA are Bolder Mere, Bolder Mere Lake and Ockham Common. These units are considered to have a conservation status of Unfavourable, Recovering, largely due to encroachment from trees and scrub.

3.11 **Table 2** (below) provides a summary of the condition of the SSSI units, which are also shown on **Map 3.**

Table 2: Summary of Ockham and Wisley Common SSSI Units.

Unit Number	Unit Name	Condition	Habitat	Reason for Condition
003	Wisley Common (E)	Unfavourable Recovering	Dwarf shrub heath – Lowland	Scrub encroachment has been managed to allow heather regeneration. More scrub and bracken management needed.
004	Pond Farm Pond	Favourable	Standing open water	Good range of aquatic species, grazing is controlling Molinia growth.
005	Wisley Common (W)	Favourable	Dwarf shrub heath – Lowland	Grazing and bracken spraying ensure that the dry heathland meet all targets.
006	Wisley Common Bog	Unfavourable Recovering	Standing open water	Willow, floating club rush and Crassula invasion. All require management before they begin to dominate the bog habitat.
007	Bolder Mere	Unfavourable Recovering	Dwarf shrub heath – Lowland	Rhododendron, Pine and sweet chestnut beginning to dominate, as well as some other tree and scrub species. Thinning of pine trees is required, along with ongoing management of rhododendron to allow heather to re-establish.
008	Bolder Mere Lake	Unfavourable Recovering	Standing open water	Crassula reaches most areas of the lake although spraying has been carried out. A water framework directive project is underway to investigate sediment and water column nutrient levels and determine the effects of run-off from the road. The fish population also requires investigation, with potential removal of some fish to establish a healthy ecosystem.
009	Ockham Common	Unfavourable Recovering	Dwarf shrub heath – Lowland	Some forestry work has allowed for some heather regeneration. More pine/birch clearance required as well as weed pulling and grazing to encourage areas of bare ground.
010	Chatley Heath	Favourable	Dwarf shrub heath – Lowland	Tree and scrub clearance undertaken under the HLS agreement has resulted in this unit moving from unfavourable recovering to favourable.
012	Land north of M25	Unfavourable Recovering	Dwarf shrub heath – Lowland	Whilst not containing any heathland vegetation, it is still a good example of secondary woodland with value for invertebrates and birds.

Current Distribution of Annex 1 Birds

3.12 Data on the distribution of Annex 1 bird species across Wisley and Ockham Commons SSSI was obtained from 2J's Ecology for the years 2010-2014.

3.13 The records from the 2010-2014 surveys are shown on **Map 3** and broadly indicate that the majority of Nightjar are distributed in units 9 and 10, located to the north of the site and to the east of the A3 (Ockham Common). Units 3 and 5 are located to the west of the A3 within Wisley Common where Woodlark numbers are higher. The closest Nightjar territory recorded within the survey period was approximately 560m of the Application Site boundary, within Ockham Common, and the closest Woodlark territory approximately 750m north of the Application Site boundary.

3.14 The numbers of territories held by Nightjar and Woodlark between 2010 and 2014 are set out in **Table 3** below. **Table 3** shows that territories have shifted spatially between units but total numbers have remained fairly constant across the SSSI. No Dartford Warbler territories were recorded by 2 J's Ecology between 2010-2014, although signs on site containing 'Winter Ranger Notes' for Wisley Common and Ockham and Chatley Heath, 2014-2015 report the return of Dartford Warbler.

Table 3: Annex 1 bird distribution and territory number between 2010-2014 within Wisley and Ockham Commons SSSI. *WL=Woodlark; NJ=Nightjar; number = territories held that year; per unit.*

		SSSI Unit				Total
		3	5	9	10	
Year	2010	WL 1	WL 1	WL 1, NJ 1	NJ 1	WL 3 NJ 1
	2011	WL 2	WL 1	NJ 1	NJ 4	WL 3 NJ 5
	2012	WL 1, NJ 1	WL 2	WL 1, NJ 2	NJ 3	WL 4 NJ 6
	2013	WL 1	WL 2	WL 1, NJ 2	NJ 2	WL 4 NJ 4
	2014	WL 1, NJ 1	WL 2	WL 1, NJ 1	NJ 3	WL 4 NJ 5

4. ASSESSMENT OF POTENTIAL EFFECTS ON INTERNATIONAL SITES

Introduction

4.1 This section uses the Source-Pathway-Receptor model to outline how the International Site qualifying features might be adversely affected by the changes predicted to arise as a result of the Proposed Development *in the absence of impact avoidance and mitigation* measures. Each is then considered in greater detail in the following sections (**Sections 5** to **9**).

4.2 The source of potential effects in each case derives from the construction and operation of the Proposed Development.

Sensitivity of Qualifying Features

4.3 Descriptions of the sensitivity of the qualifying features of each International Site and their vulnerability to potential impacts are summarised here with details given in the relevant impact assessment sections (**Sections 5** to **9**).

Species Disturbance

4.4 The following potential impact Pathways are identified with regard to Species Disturbance:

- Recreational pressure;
- Cat predation; and
- Noise.

4.5 The Receptors are:

- the Thames Basin Heaths SPA qualifying Annex 1 birds.

4.6 The sensitivity of the Receptors in respect of each Pathway is as follows:

Recreational Pressure

4.7 Birds can be sensitive to increased recreational use of nearby land by residents from new housing since this may disturb their feeding and breeding behaviour, potentially leading to adverse effects. Potential impacts are assessed in **Section 5**.

Cat Predation

4.8 Birds are vulnerable to direct predation by cats and associated disturbance effects. Potential impacts are assessed in **Section 6.**

Noise

4.9 Birds can be sensitive to increased levels of noise during the construction and operation phases. This may be of sufficient magnitude or duration to disturb their feeding and breeding behaviour, potentially leading to adverse effects on populations. Potential impacts are assessed in **Section 7**.

Habitat Damage

4.10 The following potential impact Pathways are identified with regard to Habitat Damage:

- Recreational pressure;
- Water quality and quantity;
- Air pollution.

4.11 The Receptors are:

- Habitats supporting Annex 1 bird species.

4.12 The sensitivity of the Receptors in respect of each Pathway is as follows:

Recreational Pressure

4.13 In addition to disturbance effects on birds, increased recreational use has the potential to result in trampling and habitat fragmentation as a result of the creation of desire lines, eutrophication of habitats as a result of dog fouling and littering, and increased risk of wildfire. Potential impacts are assessed in **Section 5**.

Water Quality and Quantity

4.14 Heathland and woodland habitats are sensitive to the effects of changes in surface water and groundwater quality from pollution, and to changes in water quantity which may affect the water table and water levels essential for supporting heathland and woodland habitats and vegetation communities. Potential impacts are assessed in **Section 8**.

Air Pollution

4.15 Many terrestrial habitats are sensitive to changes in air quality, including atmospheric nitrogen dioxide concentrations usually associated with traffic and leading to localised effects, and nutrient deposition and acidification which may lead to changes in habitat composition and condition in the long term. Plants are vulnerable to deposition of dust which may occur during the construction phase since it may smother vegetation to such a degree that it causes localised vegetation dieback. Potential impacts are assessed in **Section 9**.

5. RECREATIONAL PRESSURE

Introduction

5.1 This section considers the potential effects of increased recreational pressure generated during the operational phase of the Proposed Development on the Thames Basin Heaths SPA, principally in terms of disturbance to qualifying SPA birds.

5.2 When reading this section reference should be made to the *Wisley Airfield, Framework Thames Basin Heaths SPA: Impact Avoidance and Mitigation Strategy* report included as Appendix 4.3 to the ES.

Receptor Sensitivity

5.3 The effects of public access and recreational pressure on populations of Annex 1 heathland birds have been studied in detail, as reviewed by Underhill-Day (2005).

- Studies across a range of bird species have shown that effects from human disturbance can be both indirect and complex. Effects can include restriction of nest site choice, reduced breeding success, changes in population breeding density, and lower foraging rates.

- Mechanisms for reduced reproductive success have included: nest trampling, predation of eggs or chicks by dogs, flushing of adults leading to predation of eggs or young by natural predators or increased mortality as a result of young being separated from parents.

- Effects have included poorer site fidelity, increased energy expenditure, changes in nest site choice, lower breeding densities, changes in community structure with increases in common species and negative effects on rarer species, failure of pairs to breed or abandonment of nest before or after egg laying or hatching, increased predation rates, reduced incubation or brooding times and lower feeding rates.

5.4 Increases in recreational pressure have the potential to result in the following effects on Annex 1 birds and habitats supporting Annex 1 birds:

- Disturbance as a result of recreation, particularly walking dogs off leads, which has the potential to cause increased nest predation and death of chicks through exposure whilst parents are flushed from the nest, both resulting in a reduction in species density.

- Predation, either through direct predation from dogs on birds, their eggs or chicks, or through disturbance resulting in an increase in corvid predation once birds are flushed from nests – as described above.

- Trampling causing habitat erosion and accidental trampling of eggs.

- Fragmentation within heathland as a result of the creation of new, and widening of, existing paths.

- Enrichment through dog defecation and potentially littering resulting in effects on the composition of habitats.

Defining the Zone of Influence

5.5 The potential Zone of Influence with respect to recreational pressure may extend up to several kilometres from the Site boundary, although evidence indicates that the main effects (in the absence of impact avoidance measures) would occur within 5 km of the site boundary (Liley et al. 2005; Fearnley & Liley, 2013; JSPB, 2009).

Assessment Methodology

5.6 Existing information regarding the patterns of access to Wisley and Ockham Commons SSSI gathered as part of research undertaken across the Thames Basin Heaths by Liley *et al.* (2005 & 2012) was assessed as part of a desktop study.

5.7 Further site specific information was obtained from the results of a visitor survey carried out by Ecology Solutions in 2014 on behalf of Wisley Property Investments Ltd. (access points surveyed are shown on **Map 4**), in addition to a second visitor survey that was designed by EPR and carried out by Marketing Means in July 2015 (access points surveyed are shown on **Map 5**, with a summary of the methodology and results provided at **Appendix 5**).

Assessment of Likely Significant Effects

Construction Phase

5.8 There are no predicted recreational impacts associated with the construction phase.

Operational Phase

Baseline Recreational Pressure

TBH-wide Survey

5.9 In order to understand the patterns of visitor access to the Thames Basin Heaths SPA, Natural England commissioned a TBH-wide visitor survey, which was carried out in 2005 and reported by Liley et al. (2005). In 2012 this survey was repeated in order to monitor any changes in visitor access patterns since the 2005 study (Fearnley & Liley, 2012).

5.10 Across the SPA as a whole, the surveys found that the largest user group is dog walkers, with a high proportion of people interviewed on site being accompanied by at least one dog. Two-thirds of those with a dog walked with the dog off the lead. Most people visiting were

local residents who visited once a week, or in the case of dog walkers daily. Most people arrived by car, although this varied with location, and most visits lasted less than 1 hour. A high proportion of visitors travel from locations within 5km of the SPA, with 94% of postcodes returned during the 2012 survey within 5km of the SPA boundary.

5.11 Two access points on Wisley and Ockham Commons SSSI were surveyed in 2005 and 2012 as part of these studies. These included access point 25 near Wisley RHS to the west of the A3 on Wisley Common (Wren's Nest car park), and access point 26 on the east side of the A3 at the main Boldermere car park. In the most recent 2012 study, these access points received low to moderate visitor numbers in the context of the whole SPA, with 111 people (adults and children) and 47 dogs entering the Boldermere car park and 120 people and 109 dogs entering the Wren's Nest car park. Numbers of people entering access points 25 and 26 at Wisley and Ockham Commons SSSI represent 1.9% and 1.7%, respectively, of the total number of people entering access points surveyed across the whole SPA.

5.12 All visitors to access point 25 (Wisley Common) arrived by car, and only 1 person arrived at access point 26 (Ockham Common) on foot. Routes walked on site are shown in **Figure 1** below, extracted from Fearnley & Liley (2012). On Ockham Common, all of the routes were focussed on land to the north of Old Lane, where routes presumably start and head east from the main car park.

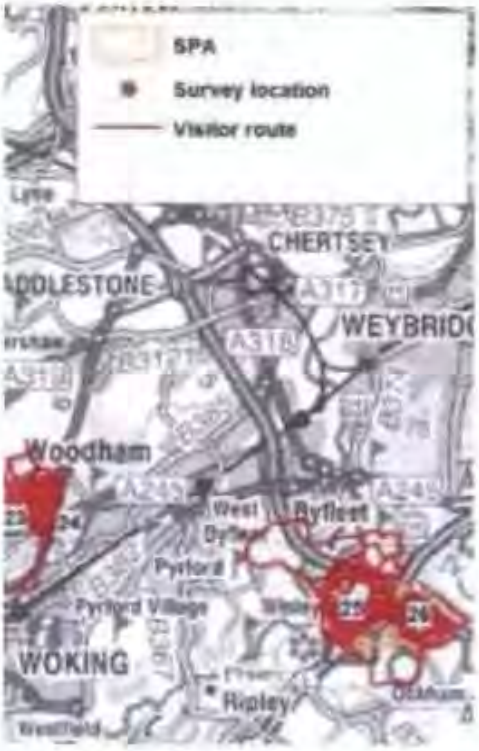

Figure 1: *Walking routes recorded by Fearnley & Liley in 2012 for Wisley and Ockham Commons, extracted from Map 7.*

5.13 The 2012 report concludes, following a comparison of 2005 and 2012 survey data, *"there is therefore no evidence of an increase in visitor numbers despite an apparent increase in housing."*

5.14 Finally, one of the questions asked during the 2012 survey was *"what features would be necessary to make another site attractive for you to use instead of here?"*. Although many people answered 'nothing' other commonly returned answers (in descending popularity) included 'large open space', 'close to home', 'attractive scenery', 'circular walks', 'more dog friendly', 'better/easier parking' and 'better path surfacing/network'. For those that returned 'other' for the Ockham Common access point that is closest to the Application Site, the most common responses were 'more dog friendly', 'safe' and 'more facilities (benches, interpretation, refreshments'.

Site-specific Survey, 2014

5.15 In addition to the work carried out by Footprint Ecology, Ecology Solutions were instructed by Wisley Property Investments to carry out a count of visitors to the two car parks at Ockham Common (Boldermere and Pond car parks) and the four Public Rights of Way running through the Application Site. The access points surveyed over a total of 48 hours are shown on **Map 4**, and visitor numbers recorded are shown in **Table 4**. Counts were carried out at each access point on simultaneous dates in April 2014. Postcodes were recorded to enable visitor origins to be mapped, also shown on **Map 4**.

Table 4: Results of Ecology Solutions Visitor Count, 2014.

Access Point	Total number of visitors recorded	Number of hours surveyed	Average number of visitors recorded / hour	Number of visitors expected in a 12 hour day
1 (Bridleway 544)	139	48	2.90	34.75
2 (Footpath 15)	69	48	1.44	17.25
3 (Bridleway 16)	38	48	0.79	9.5
4 (Footpath 19)	82	48	1.71	20.5
5 (Boldermere car park, AP 26 of Footprint study)	343	48	7.15	85.75
6 (Pond car park)	408	48	8.50	102

5.16 The number of visitors recorded at the Boldermere car park during the Ecology Solutions survey per hour were broadly equivalent to the number recorded during the 2012 Footprint Ecology study (although Footprint Ecology were not able to survey for the full 16 hours at this access point owing to 'antisocial behaviour' and so their per hour count is likely to represent an underestimate of visitor numbers across the 16 hour survey period).

Site-specific Survey: 2015

5.17 In order to further refine the impact avoidance and mitigation strategy for the Wisley Airfield scheme, Wisley Property Investments Ltd. instructed a second site-specific visitor survey which was designed by EPR and carried out by Marketing Means in July 2015. Further details regarding this survey are provided at **Appendix 5** and access points surveyed are shown on **Map 5**; access points included the two main vehicular access points at Boldermere and Pond car park, but also two pedestrian access points to the southeast.

5.18 94 interviews were completed during the survey, with a total of 140 people and 111 dogs present within the groups interviewed; however 198 people and 234 dogs were recorded exiting the site in total during the 16 hours of survey. Relatively high interview refusal rates were encountered, as was noted during the 2012 Fearnley & Liley study, which related to access to the café at the Boldermere car park and hot weather conditions during the surveys; however sufficient data to understand the patterns of access to the site was still collected. The patterns of visitor access were consistent with the TBH-wide surveys carried out in 2005 and 2012 (Liley et al. 2005; Fearnley & Liley, 2012). Visitor counts and origins were also consistent with the Ecology Solutions survey of 2014 (**Map 4**).

5.19 The largest user group was dog walkers, with 90% of visitors being accompanied by a dog. 83% of dog walkers walked their dog off the lead. Most people visiting were local residents who visited once a week or two-three times a week. Most people arrived by car with visits lasting between 30 minutes and 1 hour.

5.20 Routes walked on site are shown on **Map 6**, with all routes focussed on land to the north of Old Lane. Visitors predominantly took routes around the perimeter of Ockham Common, where the greatest density of recreational pressure was recorded, and the network of paths criss-crossing through the central heathland area were also used to a lesser degree. Routes taken on the day of the visit were predominantly similar to routes taken during other visits.

5.21 Most people visited owing to the ability to let the dog off the lead, because the site has good car parking, because the site was close to home, because of the length and variety of paths/tracks and because of the look and feel of the site. Roughly half of visitors interviewed visit other open spaces for the same purpose, with popular alternative sites including Bookham Common, Esher Common, Chobham Common, Newlands Corner, Sheepleas on the North Downs and other local open spaces. Alternatives sites are generally visited to make a change/for variety, because they are more convenient/closer to home, because they have good car parking and because dogs can be let off the lead. Roughly half (53%) of visitors interviewed said that they would use new open space if it were provided in the local area, and a further 13% said that they would but only if it were dog friendly, had parking, with a further 8% saying that they would if it had the right features/character, 7% if it was close to home and 5% if it was large and open. Only 1% said that they wouldn't use new open space if it were provided.

Summary of Baseline Pressure

5.22 Taking the upper and lower number of visits per hour made to Wisley and Ockham Common, as recorded during a combination of the 2012 (Fearnley & Liley, 2012), 2014 (Ecology

Solutions) and 2015 (Marketing Means) surveys, visitor numbers per annum would be estimated at between 70,737 and 84,972 based upon an average day length of 12 hours per day and visits 365 days per year. The 2005 study estimated that 5,365,500 visits are made to the Thames Basin Heaths per year, and with the 10% increase in visitation estimated from the 2012 survey, total visitation per annum would be projected at 5,902,050. Current estimated visits to Wisley and Ockham Commons SSSI would therefore represent between 1.2 and 1.4% of visits to the whole SPA.

Potential Change in the Pattern of Baseline Recreational Pressure

5.23 **Section** 2 (and **Appendix 3**) provides a summary of the Highway improvement measures proposed within the scheme, which include:

- Proposed highways measures between Boldermere car park and Pond car park on Old Lane, restricting traffic coming from the north accessing Pond car park to the south;
- Closure of Elm Lane to motor vehicles with a new access route to Elm Corner provided through the proposed development site;
- Potential road closure on Plough Lane north of the M25 at Pointers Green; and
- Potential road closure along Ockham Lane adjacent to the site access.

5.24 Further information regarding these improvements is provided in Chapter 14 of the submitted ES.

5.25 These measures would be secured by S106 contribution and can be imposed by a Traffic Regulation Order; during pre-application consultation, Surrey County Council has expressed their support and willingness to accept funds to affect traffic restrictions to Pond car park.

5.26 The results of the Ecology Solutions Visitor Survey (2014) have been used to consider the potential effect of the proposed Highways measures on the baseline patterns of access to the SPA. This survey data has been used owing to the higher sampling effort employed (relative to the 2015 survey which was focussed on obtaining qualitative information regarding visitation), which provides a more accurate understanding of the number of visitors whose access to the SPA is likely to be impeded by the proposed Highways measures.

5.27 Visitors accessing Ockham Common currently park at two locations: Boldermere car park and Pond car park (access points 5 and 6 on **Map 4**). The proposed Highways measures to prevent southbound traffic along Ockham Lane after Boldermere car park and to prevent westwards travel along Plough Lane would effectively prevent access to Pond car park for visitors travelling from 'inside' the M25 (refer to **Appendix 3**). Examination of the points of origin of existing SPA visitors accessing Pond car park during the Ecology Solutions visitor survey indicates that access for 11% of existing SPA visiting households would have been restricted had the proposed Highways measures been in place during the survey.

5.28 Restricted access to Pond car park for residents living inside the M25 is likely to divert a proportion of the baseline visitation to Boldermere car park, which will still be accessible off the A3. Whilst broadly the same areas of Ockham Common are accessible on foot from both the Boldermere and Pond car parks, rendering the potential effects of visits from these access points virtually indistinguishable, concentrating access at Boldermere car park would have the benefit of allowing access management efforts to be further focussed at this location. It would also mean that a higher proportion of visits, including any anti-social or irresponsible behaviour associated with those visits, could be 'policed' from a single location increasing the likelihood for achieving positive control of unwanted behaviour. Whilst the baseline of visits to the SPA may therefore only be partly reduced as a result of the Highways measures, the potential for impacts to arise as a result of those visits is likely to be reduced, having a positive effect on restoring the site to favourable conservation status and helping to achieve the conservation objectives for the SPA.

5.29 Notwithstanding that, Boldermere car park has a limited size, and is already well-used, therefore increasing the number of visits made at this location is likely to increase the perception of this access point being 'busy', and in peak times of activity car park space availability could become limited. This has the potential to prompt visitors to select alternative recreational sites in the local area with adequate car parking or car parking locations that are less 'busy', which given suitable advertising could result in visits being diverted to the Wisley SANG. The most logical and direct way to access Pond car park following construction of the one-way stop on Old Lane (and with reference to **Appendix 3**) will be through the new Wisley settlement and past the car park to the Wisley SANG, further increasing the likelihood of the SANG intercepting a proportion of baseline SPA visits.

5.30 The proposed Highways measures therefore have the potential to result in positive effects on the baseline level of recreational pressure on the SPA, either by reducing the propensity for visits to result in negative effects on the qualifying features of the SPA, or by reducing the baseline number of visits to the SPA and any associated impacts.

Potential Increase in Visitation

5.31 The key component of the Proposed Development with the potential to affect SPA birds in the absence of impact avoidance and mitigation measures is the proposal for 2,060 new dwellings and 8 Gypsy and Traveller pitches which will introduce new residents in to the area who may choose to pursue recreational activity such as dog walking within the SPA. 60 C2 Use Class dwellings have been excluded from this assessment on the basis that they will accommodate residents with limited mobility (and not staff within self-contained accommodation) who are unlikely to recreate within the SPA and who will not be able to own pets owing to a pet covenant that will be enforced by the accommodation management company. These characteristics of the C2 Use Class can be made the subject of planning condition or obligation, in order to secure no potential for contribution towards an effect on the SPA.

5.32 Based upon an occupancy ratio of 2.4 people per dwelling, these 2,008 new homes would generate an increase in 4,819 new residents within the Zone of Influence of the SPA.

5.33 The Pet Food Manufacturers Association (PFMA) website provides regional statistics for dog ownership, and for the south east the proportion of households owning a least one dog is 22%. The 2012 TBH visitor survey found that dog owning groups interviewed were accompanied by on average 1.6 dogs, whereas the 2015 Marketing Means site-specific survey found that the figure was 1.3 dogs/dog owning group. Taking the upper figure as a precautionary figure, 22% of houses within the Proposed Development would account for 442 dog owning households, owning a total of 707 dogs.

5.34 The JSPB (JSPB, 2009) and Guildford Borough Council (GBC, 2010) advocate a 400m exclusion zone within which the effect of new residential development on the SPA cannot usually be successfully avoided or mitigated owing to the ease of human (and cat) movement at such distances. Natural England's SANG Guidelines (NE, 2008) and their original Draft Delivery Plan (EN, 2006) describe 400m as an 'easy walking distance' such that should housing be delivered within the 400m visitor catchment of a SANG the provision of car parking is not considered to be a 'must have' feature of the SANG because residents will be living 'within easy walking distance' of the SANG.

5.35 Although the proposed housing will be located outside of the 400m zone, all of the houses will be located within 800m of the SPA. Whilst this distance from the SPA may be too far for some residents to access on foot, the SPA would still be easily accessible by car or by other non-mechanical transport means. People do, however, prefer to visit sites that are close to home (Liley et al. 2005; Fearnley & Liley, 2012) and research carried out by EPR for other development projects has found that people prefer to walk to open spaces if possible. Furthermore, the number of visits made by car to the SPA will be limited by the availability of car parking spaces, and the 2012 visitor survey found that car parking provision had an influence on the attractiveness of a site, therefore the perception of whether a car park space is likely to be available may influence site selection.

5.36 There are therefore a number of factors that may influence the propensity of new residents to visit the SPA, but in the absence of impact avoidance and mitigation measures the proposed increase in housing would be highly likely to generate additional SPA visits, and a proportion of SPA visits accompanied by dogs, resulting in an increase in recreational pressure and a likely significant effect on the SPA when considered in combination with effects arising from other foreseeable developments in the area.

Impact Avoidance and Mitigation

5.37 In line with the Thames Basin Heaths Special Protection Area Delivery Framework (JSPB, 2009) GBC's own TBH SPA Avoidance Strategy 2009-2016 (adopted 2010, but extended to 2016) advocates a 'three pronged approach' to overcoming adverse effects on the SPA. The three 'prongs' identified are:

- The provision of Suitable Alternative Natural Green space (SANG) to attract people away from the SPA and hence reduce pressure on it- to be delivered via developer contributions to strategic SANG or through developer provision of bespoke SANG, with SANG provision conforming to quantum and quality requirements as described in the Strategy;

- Access management measures on, and monitoring of, the SPA to reduce the impact of people who visit the SPA- to be delivered through developer contributions to the TBH-wide SAMM Project, with GBC collecting funds through a per dwelling tariff; and

- Habitat management of the SPA which will improve the habitat for the ground nesting birds- the responsibility of SPA landowners and falling outside of the development control system.

5.38 A bespoke impact avoidance and mitigation strategy for the Proposed Development has been developed based upon the first two-prongs of GBC's impact avoidance and mitigation requirements, as detailed further below.

SANG

Quantity of SANG Required

Basis for Minimum Provision Rate

5.39 GBC requires that SANG is provided at a rate of at least 8 ha per 1,000 new residents with the number of new residents calculated at 2.4 people per dwelling.

5.40 While SANG is normally provided at this provision rate, this figure can vary according to site circumstances. In pre-application discussions with NE, it was established that the development should provide over and above the normal requirement of SANG due to its proximity to the SPA and the existing Public Rights of Way that run from the site towards it.

5.41 The Proposed Development will comprise up to 2,068 dwellings of which 60 units will be C2 Use Classes, where ownership of cats and dogs will not be permitted. NE has subsequently agreed that subject to suitable planning condition these units can be discounted from the Gross SANGs calculations.

5.42 Calculation of SANG provision required based on the 8ha/1,000 standard is shown in **Table 5**, below.

Table 5: Calculation of Minimum SANG Area Requirement.

Gross number of dwellings	**2,068**
Amount of C2 Use Class to be discounted	-60
Net Dwellings for SANG calculation purposes	2,008
Population increase based on 2.4 persons per dwelling	4,819
SANG Requirement @8ha/1,000 population	**38.55ha**

Basis for Higher Provision Rate

5.43 Notwithstanding the above, Natural England has advised that a higher provision rate will be required given the particular circumstances of the proposal, and that evidence is required to determine the necessary size of the SANG.

5.44 In determining the required size for the Wisley Airfield SANG it is useful to refer back to English Nature's original *'Thames Basin Heaths Special Protection Area Mitigation Standards for Residential Development'* (May 2006- Draft Delivery Plan, DDP) document which originally examined the evidence that was used to inform the basis for standardised SANG provision rates, and which was examined as part of the South East Plan Examination in Public (EiP).

5.45 Paragraph 5.3 of the DDP states:

"There are therefore two issues when proposing generic size standards for avoidance measures in the form of alternative greenspace:

i. the quantity of greenspace per new population standard. Generally quantity is expressed as an area of hectares of open space per thousand population

ii. the minimum size a site needs to be to act as an effective avoidance measure, attracting and accommodating the targeted user groups."

5.46 In respect of point i. the South East Plan EiP Assessor's Report (Burley, 2007) reviewed, and went on to accept as an acceptable evidential basis, an arithmetic approach to calculating the quantum of additional open space that would be required to absorb, on an equivalent density, the number of visits generated by development that would otherwise be made on the SPA.

5.47 In order to understand the area of SANG that would be required to absorb the number of visits that would otherwise be made to the SPA, on an equivalent basis to the visitor density experienced on the SPA, the site-specific visitor survey results collected in 2015 (for which the extent of associated access is known) have been used to calculate the density of visits made on the SPA per hectare.

5.48 The survey found that 12.4 people exited the eastern part of Ockham Common (the principal area accessed for recreation) per hour, resulting in an estimated 54,385 visits per year made over an 80ha area. The main, and most sensitive part of Ockham Common with the potential to be affected by the proposed development, therefore absorbs 680 visits/year/ha, a figure slightly higher than that cited for the whole TBH SPA in the South East Plan EiP Assessors Report (Burley, 2007). It is important to note that this figure represents, on a precautionary basis, the lowest figure that could have been calculated using the primary data available, since the 2014 visitor survey recorded a higher number (N=15.65 visits/hr) of people existing this part of Ockham Common meaning that the SPA is able to absorb a relatively higher number of visits per hectare than that cited above and taken forward in this assessment, however by using the lower figure this results in a higher area of SANG being required.

5.49 The minimum area of SANG that is required to absorb the number of visits that would otherwise be made to the SPA, on an equivalent basis to the visitor density experienced on the SPA, can then be calculated as per **Table 6**, using the approach taken by the South East Plan EiP Assessor. The figure calculated in the South East Plan EiP Assessors Report was 7.16ha (which was later rounded up to 8ha), which is comparable to the site- and context-specific figure arrived at below. That SANG is delivered at a higher rate than the minimum figure calculated means that the equivalent number of visits that would otherwise be made on the SPA would be absorbed within a larger relative area of open space, such that the density of visitor access would be lower within the SANG than in the SPA, thereby contributing to the attractiveness of the SANG in order to secure deflection of visits.

Table 6: Calculation of SANG Area Requirement Following Approach taken by Burley, 2007.

Gross number of dwellings	2,068
Amount of C2 Use Class to be discounted	-60
Net Dwellings for SANG calculation purposes	2,008
Population increase based on 2.4 persons per dwelling	4,819
Visits absorbed by SPA/ha	680
Visits to SPA made per person per year	5*
Visits to SPA per year from development	24,095
Total SANG area required to absorb visits/ha	35.4
Equivalent SANG provision rate/ha/1,000	**7.34**

** Figure used in SEP EiP Assessors Report, plus 10% increase in visitation identified by Fearnley & Liley, 2012.*

5.50 Two principal SANG blocks are to be delivered that lie to the north and south of the central proposed housing areas (**Map 2**). Cumulatively these equate to 49.9ha of SANG provision, a significantly greater provision than the 8ha/1,000 standard (38.55ha of SANG- **Table 5** above) and the bespoke area requirement identified in **Table 6** (35.4 ha). While shown as separate parcels of land, they are physically connected by SANGs links within green corridors affording a wide choice of circular routes and visitor experiences.

5.51 However, irrespective of the SANG area/capacity requirement, and as identified under point ii. of the DDP, it is necessary to provide a SANG of sufficient size to accommodate the specific features that are required to make it an attractive alternative destination to the SPA for the target user group, in the case of the TBH SPA, dog walkers. The single SANG design feature that has the greatest influence on the minimum area of SANG required to be delivered to make it an effective alternative to the SPA, that is to provide the equivalent features and/or experience available within the SPA, is the circular walk length (NB: quivalent in terms of attractiveness to the target user group, not necessarily identical in nature to the SPA).

5.52 In examining the features that attract people to open spaces in the TBH area Liley et al (2005b) concluded *"alternative sites should be large enough to accommodate the length of a visit typical of visitors to the SPA, especially in respect of accommodating a long dog walk"* The SANG Quality Guidelines therefore require a minimum 2.3-2.5km circular walk to be provided within a SANG, which was the average walking length derived from the early TBH-wide visitor survey (Liley et al. 2005). In many cases where the required SANG provision rate is the 8ha/1,000 'standard', a higher provision rate is actually delivered by developments in order to incorporate the required circular walking length within the SANG.

5.53 In that respect, residential development has an accompanying 'critical mass', wherein larger developments can deliver the required circular walk length without a necessary and accompanying increase in the SANG provision rate. This is evidenced by comparison of the provisions made by Albany Park in **Table 7** below in relation to Amen Corner South. Amen Corner South owing to its larger size (more dwellings) is able to deliver the required minimum circular walk length at the standard SANG provision rate of 8ha/1,000, whereas Albany Park owing to its smaller size delivered SANG at a higher provision rate but only incorporated the minimum circular walk length required by the SANG quality guidelines.

5.54 Indeed depending on the overall quantum of housing and thus SANG being delivered, a longer than average circular walk length can be provided without an accompanying or proportionate increase in the provision rate. This is evident from review of SANGs that have been consented/implemented in other locations that are close to the SPA, and are therefore comparable to the Wisley situation, as illustrated by **Map 7** and **Table 7**

Table 7: Comparison of Consented SANGs in Close Proximity to SPA.

SANG	Size devel. (no. houses)	Proximity devel. incl. SANG to SPA (km)	SANG area (ha)	Provision rate (ha/1,000)	Length circular walk (km)*	Max walk length on closest part(s) of SPA (km)^
Wellesley	3,850	0	98	10.6	9.5	4.8, 10.9
Deepcut Princess Royal Barracks	1,200	0	35	12	3.85	3.3, 4.5
Former TRL	1,000	0	42.5	18	3.7	3.8, 12.1
QE II Barracks	872	0.5	72	10.7 (now reduced to 8 by use as Hart DC strategic SANG?)	2.6	10.9
Albany Park	315	2.1	17	22.5 equiv. (req only 8- excess SANG likely to serve	2.3	10.9

				further development)		
Land at Amen Corner	725	2.5	13.4	8	2.9	12.1

* *Taken from planning application reports or estimated possible route using GIS*

^ *Taken from Liley et al. 2005*

5.55 Owing to the proximity of the proposed development to the SPA and the particular circumstances of the scheme, Natural England has advised that the full range of lengths of walks carried out on the SPA be considered in establishing the necessary size of the SANG, not just the length of walk carried out by the average user.

5.56 Notwithstanding the soundness of this approach to determining the minimum area of SANG required in this instance, with reference to the lengths of walk taken around the closest component units of the SPA surveyed during the TBH-wide visitor survey (Liley et al. 2005), the circular walk length provided by consented SANGs shown on **Map 7** does not consistently provide for the equivalent walking length sought on the SPA (as detailed within **Table 7**). Indeed consultant reports supporting the design and delivery of these bespoke SANGs which might similarly be expected to represent departures from the 'norm' given their proximity to the SPA, rarely pay reference to the actual walking lengths taken by visitors around the closest parts of the SPA and therefore the equivalent experiences needing to be provided for within the SANG to make it an effective alternative destination to the SPA.

5.57 This was acknowledged by the South East Plan EiP Assessor when appraising the case studies referred to in the DDP (Queen Elizabeth Barracks at Fleet and Lorraine Road, Camberley) *"the amount of space provided by these schemes appears to have been determined by the particular circumstances of the case rather than in accordance with any quantitative assessment of need"* (Burley, 2007).

5.58 Nevertheless, the lengths of all routes taken around the closest component unit of the SPA have been considered in evaluating the likely ability of the quantum of SANG proposed to provide an equivalent experience to that possible and sought on the SPA, and therefore the likely ability to provide effective impact avoidance for the Wisley Airfield scheme.

5.59 Visitor survey results from the 2015 survey of Ockham Common show that on average visitors took a 2.9km length route during a visit, 75% of visitors took a route of up to 3.7km during a visit and the longest route taken during a visit was 4.6km (routes taken are shown on **Map 6**; 89% of routes taken during the survey were similar to routes taken during other visits). The Wisley Airfield SANG therefore needs to be large enough to incorporate circular routes of these lengths, in addition to other qualitative features sought by visitors to the SPA, in order to provide at least an equivalent experience, and as far as is possible a more attractive experience, to that possible on the SPA and therefore be effective in intercepting visits that would potentially otherwise be made on the SPA. This has been achieved within the SANG provision proposed at 49.9ha, as is explained further below, without any further required increase in the quantum of SANG being delivered nor the equivalent provision rate (10.35ha/1,000). The SANG provision rate proposed by the Wisley Airfield scheme is comparable to both the Wellesley and QE II Barracks schemes listed in **Table 7**, which are

similarly proximate to the SPA, and a much longer circular walking route can be delivered within the Wisley SANG to that delivered within the QE II Barracks SANG.

SANG Capacity Discounting

5.60 There are six existing Public Rights of Way (PROW) running through the proposed SANG that are subject to existing public access (**Map 2**). Section 2 of the Countryside and Rights of Way (CRoW) Act 2000 sets out the legal basis for the use of PROW wherein the legal right to pass and repass relates solely to the right of way. There is no common minimum width that applies to all PROW, however landowners are required to keep PROW free from obstructions with a minimum clearance width of 1m for footpaths, 2m for bridleways and 1.5m for field-edge footpaths (from www.gov.uk).

5.61 SANG capacity discounting should be applied to the publically accessible areas encompassed by the PROW running through the SANG, and calculation of SANG capacity discounting is set out in **Table 8** below.

Table 8: Existing publically accessible land associated with existing PROWs within the SANG.

PROW (FP- footpath, BW- bridleway, FEFP- field edge footpath & number)	Length within SANG	Clearance Width (m)	Accessible Area (m^2)
FP19	346	1	346
BW16	217	2	434
FP15	193	1	193
BW544	382	2	764
FP16A	1,008	1.5	2,016
FP13	107	1	107
Total accessible area of PROWs within SANG			*3,860*

5.62 The above would suggest that it would be appropriate to discount 0.39ha from the total SANG area representing existing accessible land within the SANG, resulting in an available SANG area of 49.51ha. However use of the PROW may have effects on the feeling of capacity within the SANG beyond the limit of the land that is physically accessible.

5.63 Therefore the alternative method for calculating the SANG capacity discounting required is the approach used by Bracknell Forest Council (BFC, 2012). Using the Bracknell Forest approach, the level of existing use of the Wisley PROW results in a discount from the available area (49.9 ha) of 0.87 ha, such that the area of the proposed SANG that can count towards the SANG requirement is 49.03ha (see calculation in **Tables 9** and **10**). This equates to a revised provision rate of 10.174ha/1,000 population.

5.64 An Outline SANG Habitat Creation & Management Plan has been produced to accompany this Information for HRA report, which sets out measures to ensure the reconciliation of public access and features of existing nature conservation value within the SANG. There

are no areas within the proposed SANG that are considered to be so sensitive so as to require the exclusion of public access, therefore no further SANG capacity discounting is considered necessary.

Table 9: Calculation of total visits per person per year to the TBH SPA based on frequency of visits, taken from Fearnley & Liley, 2012. *This data has been used in the absence of qualitative information regarding frequency of use of the PROW running through the proposed SANG, but is considered to represent a reasonable assumption regarding visitation rate since the PROWs are used to access the SPA and even doubling this visitation rate would still mean that there was an excess provision of SANG.*

% people visiting SPA	Frequency of visit	Visits per week	Visits per person per week	Visits per person per year
38	Daily	7	2.66	138.32
34	More than once week	4	1.36	70.72
11	Once week	1	0.11	5.72
6	2-3 per month	0.1	0.006	0.312
3	Once a month	0.03	0.0009	0.047
		Total	*215.12*	

Table 10: Mitigation capacity of proposed SANG.

[1] *based on numbers recorded using the PROW within the SANG per hour during the Ecology Solutions visitor survey. This count did not record access along FP16A and FP13, however high levels of existing visitor use are not considered to be likely along these routes owing to their respective origins/destinations. Furthermore, even if the number of visitors recorded using the PROW through the SANG were to double, the SANG provision would still be sufficient to serve the Proposed Development.*

[2] *Taken to be 215, derived from Table 9 above.*

Total visits per year (6.83[1] per hour x 12 x 365)	Equivalent no. of visitors[2]	Area of SANG (ha)	Capacity to mitigate at 10.35ha/1000	Potential visitor capacity following existing use	SANG capacity available
18,133	84	49.9	4,821	4,737	49.03

Location of SANG, Existing Habitats and Features

North SANG Area

5.65 This largest area of SANG will extend to 40.3ha. It is currently characterised by large areas of gently sloping tarmac and concrete hardstanding on lower lying land to the west and arable fields north of the former airfield runway. The two areas are physically separated by a linear tree belt and more steeply sloping embankment.

5.66 The land is bordered to the northwest and west by mature woodland that flanks Elm Corner. A semi–mature tree belt lies to the north, bordering Snakes Field, and further mature woodland and mature hedges define the northeast and east boundaries around Hatchford Corner and Old Lane.

5.67 The western area is visually degraded by the large areas of hardstanding associated with the former airfield hangars, but is visually contained by the surrounding woodland and tree belts. By contrast, the arable fields to the north are large open areas that have a more pleasant, but ordinary and un-remarkable character.

5.68 The most pleasing aspect within this area is the availability of long southerly views to the Downs afforded from the PROW within the site. Most of the key rural characteristics such as hedgerows and trees that divided the large arable fields were lost during the airfield construction and the only remaining conspicuous feature is the linear tree belt to the west.

South SANG Area

5.69 This SANG area will extend to 9.6ha. It has a markedly different character to the northern SANG, comprising mature woodland and meadows bordering the Stratford Brook to the south and steep grassland slopes to the north. The woodland is fairly open with glades and has strong visual appeal. The grassy slopes to the north form the steepest parts of the Application Site and create visual containment in combination with the woodland to the south.

5.70 A single footpath flanks the northern edge of the woodland originating at the slip road of the Ockham interchange to the west and heads east following the southern boundary of the Application Site before alighting onto Ockham Lane. This path will have a direct link with proposed SANG car park.

SANG Design

5.71 Regard has been given to Natural England's 'Guidance for the Creation of Suitable Alternative Natural Green Space' (NE, 2008), responses received during consultation and site visits with NE officers, GBC and Surrey County Council, and to the results of visitor surveys described at paragraph 5.9 et seq. and at **Appendix 5**.

5.72 The SANG Illustrative Masterplan is shown on **Figure 3** with proposed SANG habitats and key infrastructure are shown on **Maps 8** and **9**, respectively.

Circular Walk and Parking

5.73 The north SANGs area will include a 3.9km circular walk at first occupation, far exceeding the standard requirement cited in NE SANG's guidelines and delivering the route length taken on the SPA by up to 75% of users (**Appendix 5**). Shorter routes will be available, including a circular route of 2.9km within the central wildflower meadow area, equivalent to the average route taken on the SPA (**Map 9**). The northern SANGs area is connected to the SANG car park, which will also be in place at first occupation, via a SANG link incorporated within green infrastructure comprising school playing fields to the south and a village green to the north.

5.74 A route within the southern SANG will also be available at first occupation. While it is a shorter circuit of 1.8km it passes through an attractive mature landscape containing the added amenity and consequent draw of Stratford Brook. Furthermore it links directly with the SANG car park, SANG Link and therefore can be linked with circular walks within the northern SANG to achieve a total available route length (within SANG areas) at first occupation of 5.7km, exceeding the maximum route length taken around Ockham Common during the 2015 visitor survey.

5.75 Other route options will be made available as the final SANG and Green Infrastructure areas are phased in, eventually providing a range of circuit lengths up to 9.5km.

5.76 Surveys have shown that visitors prefer 'all-weather' footpaths that remain dry and mud free all year round. Therefore the main walking route in the northern SANG area, including the 3.9km circular walk, will comprise a surface of rolled aggregate of a natural hoggin type material, providing year round and all abilities access. This treatment will also be applied to paths within the SANG link that connects the northern SANG area to the car park. Additional measures such as incorporation of 'destination features' (see below), ditches and planted earth mounds within the SANG will make routes leading towards the SPA less desirable and conspicuous in the future; it will be important to establish a clear visual hierarchy of routes, and an illustration of how this might be achieved with appropriate habitat treatment is provided at **Figure 4**.

5.77 In the southern SANG, the circular walk will take in two footbridges over the Stratford Brook and part of the route south of the river will be boardwalked, again to ensure year round access and providing a varied recreational experience.

Dog Friendly Access

5.78 An important attribute for a SANG is the ability to let dogs safely off the lead (Liley *et al.* 2005; NE, 2009); indeed this was the main reason that people had chosen to visit Ockham Common during the 2015 visitor survey, making this attribute an important feature to accommodate within the Wisley SANG.

5.79 Hampshire County Council produced a guidance note on managing dog walkers in the countryside (HCC, undated) which drew upon research undertaken by the University of Portsmouth on the psychology of walkers with dogs. This note explains that *"it is very*

important to dog walkers that their dogs enjoy themselves and many feel that dogs have more fun off the lead. Not surprisingly then, when deciding where to walk, the single most important feature for walkers with dogs is the opportunity for dogs to be off lead."

5.80 The SANG areas will be enclosed by a range of measures including ha-ha's, wet ditches, planting and dog proof fences on site boundaries, so that users will be able to safely let their dogs off the lead within the SANG. These features will be regularly maintained as part of the ongoing management plan for the SANG.

5.81 The SANG will be designed to be dog-friendly, with bins for dog waste provided in discrete locations at the entrances to the SANG, and the SANG will be promoted locally as somewhere to walk dogs off the lead particularly when restrictions are in place within the SPA (described further below).

5.82 The SANG will provide large open areas of grassland so that dogs can run about freely and easily, with large areas of short grassland maintained in the eastern half of the northern SANG to enable ball/frisbee throwing etc. Such access can be contrasted with the quality of 'dog off the lead access' within the SPA, wherein large areas (principally wooded areas which cover the vast majority of the SPA) are likely to be less appealing for dogs being walked off the lead owing to the presence of dense bracken, bramble, and boggy/wet areas restricting access to tracks and trails (**Figure 2**). The open and free-roaming nature of dog off the lead access within the SANG, meaning that dogs can have more fun and be less restricted, is therefore likely to be more attractive to dog owners than many of the opportunities provided within the SPA. Several ponds will also be provided and be made easily accessible for dogs to cool-off and to splash about and have fun.

5.83 As mentioned above, the paths provided within the SANG will comprise of natural bound aggregate such as hoggin, which remain dry year round, which will again be more attractive to dog walkers than many of the paths leading to and within the SPA which suffer from wet ground conditions which render them boggy and/or muddy for large parts of the year (whenever there have been periods of wet weather) (**Figure 2**).

SANG as a 'Destination', Providing a Varied Recreational Experience and Variety of Habitats

5.84 The Proposals incorporate 'destination features' that will draw visitors to the site and the SANG, and include within the northern SANG a woodland tump from which stunning panoramic views will be possible across the Surrey Hills Area of Outstanding Natural Beauty (AONB), in addition to a large car park with adjacent visitor centre, toilets and café.

5.85 The SANG has been designed to provide a 'variety of semi-natural habitats'. This will include areas of diversified grassland, managed as longer wildflower meadows, and areas of shorter more open grassland more suitable for dog ball throwing (as described above). New hedgerows, shrubs, scrub, trees and an orchard will be planted, in places in combination with gentle earth mounds, providing a feeling of physical separation both between different areas of the SANG as users walk around the circular route, but also with the wider landscape.

Dense bracken/bramble understorey present in many wooded parts of the SPA.

Dense bracken flanking many paths within SPA.

Wet boggy fringe surrounding Boldermere Pond, largely precluding public access.

Wet woodland surrounding Pucks Pond and Boldermere Pond within the SPA, comprising wet and boggy ground conditions.

Wet muddy tracks leading to eastern part of Ockham Common from the south.

Wet muddy tracks within the SPA.

Figure 2: Photos showing the predominant habitats within the SPA which are likely to be less desirable for exercising dogs off the lead than open grassland.

5.86 The northern SANG also incorporates a number of waterbodies of varying sizes; quickly maturing attractive habitats providing immediate focal points upon entry in the SANG from

the new residential areas drawing visitors along the east-west aligned circular walking route, as opposed to along PROW towards the SPA.

5.87 Some of the waterbodies will provide Sustainable Urban Drainage as part of the SUDS Strategy for the site alongside a network of ditches. These will be designed to be of value for both people and wildlife, creating additional points of interest, by comprising aquatic vegetation and gradually sloping sides to ensure a large surface area for emergent vegetation but also public health and safety. As described above, a proportion of these features will be made easily accessible to dogs. The SUDS will work by infiltration for much of the site, however where infiltration is poor in parts of the site extreme rainfall events (major storms) are likely to generate offsite flow, the SUDS will be designed in such a way as to ensure that any such offsite flow is consistent with current greenfield runoff rates.

5.88 The SUDS features will also provide further physical separation between walking routes, for example a combination of planted earth mounds and drainage features has been designed in the narrowest part of the SANG to prevent the formation of desire lines which would act to shorten the circular walking route, as illustrated in **Figure 4**, and culverts will be used to facilitate visitor movement making the full area of the SANG accessible.

Figure 3: Illustrative SANG Masterplan.
Provided by Davies Landscape Architects.

Figure 4: Illustration of treatment of existing PROW within the northern SANG area, using Bridleway 16 as an example.
Provided by Davies Landscape Architects.

Figure 5: Illustration of treatment of narrower section of northern SANG area.
Provided by Davies Landscape Architects

Figure 6 (part a, continued overleaf): Illustration of realigned temporary Construction Access Road.
Provided by Davies Landscape Architects.

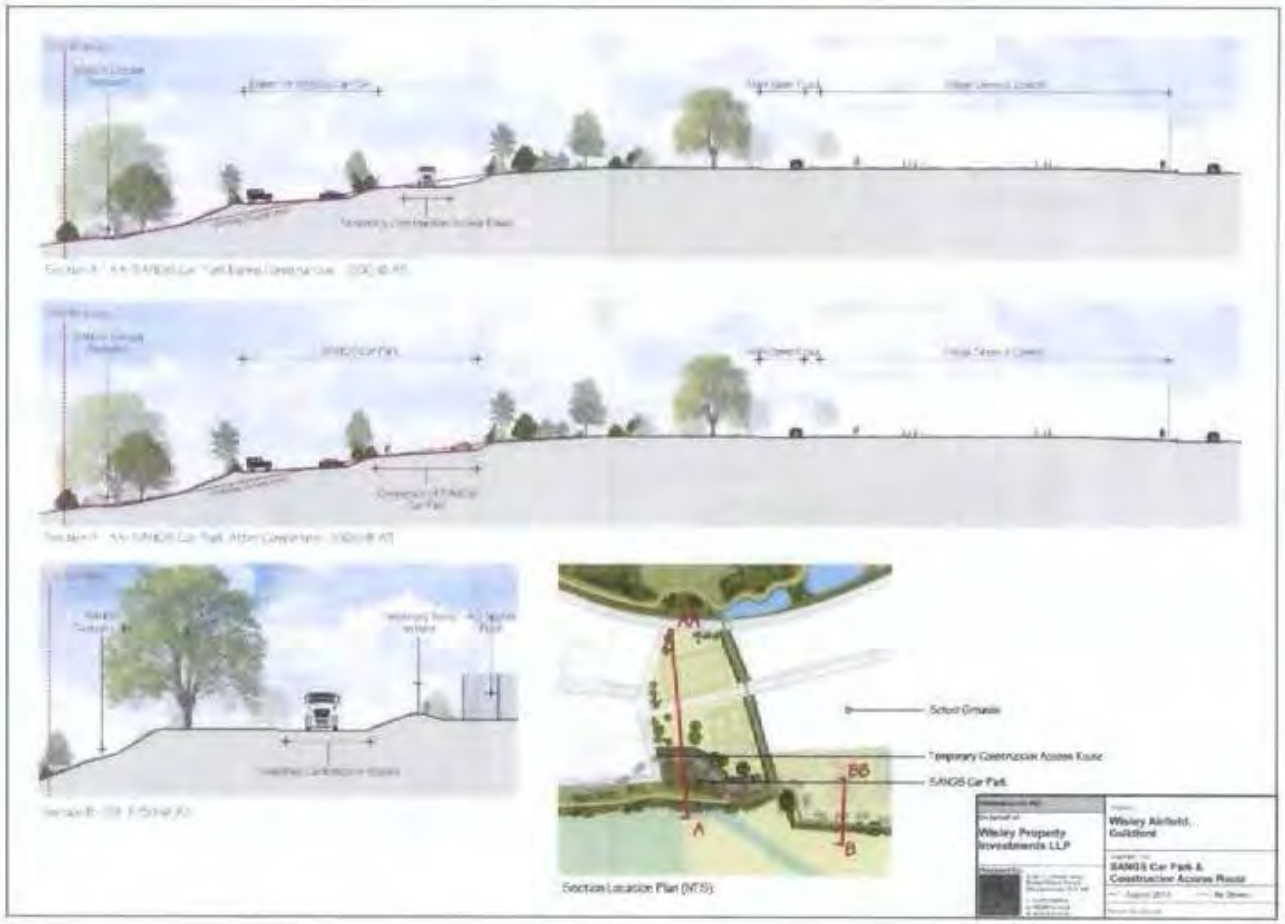

Figure 6 (part b, continued overleaf): Illustration of realigned temporary Construction Access Road.
Provided by Davies Landscape Architects.

Figure 6 (part c): Illustration of realigned temporary Construction Access Road.
Provided by Davies Landscape Architects.

Figure 7: Illustration of realigned Elm Corner access track.
Provided by Davies Landscape Architects.

Figure 8 (continued overleaf): Illustration of landscape treatment of Gypsy and Traveller site and Woodland Tump.
Provided by Davies Landscape Architects.

Figure 8 (continued): Illustration of landscape treatment of Gypsy and Traveller site and Woodland Tump.
Provided by Davies Landscape Architects

5.89 The woodland within the southern SANG area will be managed to create glades and encourage a more diverse ground flora. Two footbridges will be provided over Stratford Brook linked with a combination of unsurfaced paths and boardwalks through wetter areas.

5.90 Habitats will be designed both to provide a varied and attractive recreational resource but also to maximise incidental gains for biodiversity in line with the aspirations of the NPPF. Diversification of the grassland, creation of waterbodies and the planting of new hedgerows, shrubs, scrub and trees is likely to significantly enhance the value of the land within the SANG for wildlife, particularly invertebrates, reptiles, birds and bats. This will help to create the wild countryside look and feel to the SANG, further increasing its attractiveness and providing further interest features.

5.91 An Outline SANG Habitat Creation & Management Plan has been produced to guide the creation and ongoing management of the SANG to ensure that the newly established habitats develop as intended over time, and to maximise the benefits accrued for both SANG users and for biodiversity.

5.92 The Management Plan has taken account of the existing features of ecological value in the SANG areas such as wet woodland, mature woodland and the tree belt to the north west. Since the SANG requires management in perpetuity, this provides an opportunity for the biodiversity value of these features to be secured in the long-term; something which would not necessarily be the case in the absence of the SANG provision.

5.93 As individual SANG phases are delivered, more detailed information regarding habitat creation and specifications for SANG infrastructure will be provided within a Landscape and Ecological Management Plan (LEMP). This will be accompanied by a Construction Environmental Management Plan (CEMP) which will set out the control measures that will be in place during construction to safeguard existing features of environmental value.

Free from Urban Intrusions

5.94 The SANG has been designed to create a varied landscape that is sought by SPA visitors, containing a diverse range of habitats across gently undulating microtopographies. The SANG habitats and microtopographies have also been designed to provide visual screening to ensure that the SANG remains free from urban intrusion during construction and operation. This will include a combination of mature trees, woodland, hedgerows, scrub and wetland features, and in places bunding, incorporated along the southern edge of the northern SANG to provide visual screening of adjacent housing.

5.95 The scheme has been modified to remove the construction access route from its former alignment within the northern SANG area to ensure that its use during construction does not impinge on the 'SANG experience'. The modified route runs to the south of the neighbourhood areas, along the northern boundary of the southern SANG and to the north of the SANG car park, as illustrated on **Map 11** and in **Figure 6** (parts a-b). As shown on **Figure 6**, the route will be screened from the southern SANG, so that the SANG experience is not affected, by planting, earth mounding and by accommodating the construction access route within a temporary cutting. A small part of the southern SANG (1ha) will now be delivered in SANG Phase 4 following decommission of the construction access route. A

CEMP will include measures to prevent noise and dust liberation during construction from adversely affecting the attractiveness of the SANG. Information regarding the predicted number of HGV movements within the site per day during construction is provided at **Appendix 6**.

5.96 **Figure 7** illustrates the proposed realignment of the Elm Corner access track; the access track has been shifted to the far western edge of the SANG to maximise the area of open space between the access track and the tump for SANG users. The access track will comprise of a single carriageway of roughly 4m in width, widening in a few specific locations to create passing places, and composed of a natural resin bonded surface.

5.97 **Figure 8** illustrates the way in which embankments, the woodland tump, existing vegetation and additional planting will be used to ensure physical and visual separation of the SANG from the proposed Gypsy and Traveller site located in the teardrop shaped area to the south of the woodland tump (**Map 2**).

5.98 Existing vegetation and advance planting of the environs of the woodland tump will also ensure that it is screened from the Phase 1 SANG areas during its construction (**Figure 8**).

5.99 Rustic seating, wooden signage and interpretation boards will be placed at the entrances to the SANG area, and at one or more key locations. In order to minimise artificial and urban intrusion in or into the SANG, all furniture will be low-key and minimalistic; seating, waymarkers and interpretation boards will be of a discrete 'rustic' design, made from timber. Examples of appropriate site furniture are provided in **Figure 9**.

Figure 9: Examples of appropriate site furniture for SANG areas.

Personal Safety

5.100 Personal safety is considered to be a key issue for recreational users, as supported by evidence collected on behalf of Natural England (Liley et al. 2005, Fearnley & Liley, 2012) and as reflected in their SANG Guidelines. In particular it is a feature sought by visitors to the Boldermere car park, which has seemingly developed anti-social behaviour, and which would encourage them to use alternative sites for recreation.

5.101 The largely open nature of the SANG means that the majority of the circular walking routes will benefit from open views. Where footpath routes pass through woodland, the understory will be managed to maintain an open ride along the path and open glades along its route, to provide visual permeability and a sense of safety.

5.102 During construction a CEMP will be implemented, which will include measures to ensure public health and safety within the SANG link for users accessing the northern SANG area from the SANG car park. Fencing and signage will be used to prevent visitors from accessing the construction access road on foot, and such essential measures for safeguarding public health and safety, such as the imposition of speed limits (which will simultaneously reduce noise), will be incorporated within the CEMP. Information regarding the predicted number of HGV movements within the site per day during construction is provided at **Appendix 6**; HGV movements along the construction access route will be infrequent and are not anticipated to have an undue effect on users of the SANG car park.

Supporting Green Infrastructure

5.103 Four north to south orientated Green Infrastructure corridors (**Map 2**) will funnel people from housing areas towards the SANGs, and these corridors incorporate existing PROW such that existing residents will also be funnelled into the SANG, maximising the prospect of the SANG intercepting SPA bound visits. These GI corridors, in addition to others within the development, will also provide additional interconnecting recreational spaces and routes, adding to the number of options available within the new settlement for recreation.

5.104 Within these GI corridors, two SANGs Links are to be incorporated, connecting the northern and southern SANG compartments to each other and to the central car park (**Map 2**). SANGs Links will be clearly signposted, maintain a semi-natural feel at the core, and comprise dry and well maintained paths. **Figure 10** illustrates the broad landscape design for the Phase 1 SANG Link, which connects the car park to the northern SANG compartment, and further information will be provided within a Phase 1 SANG Landscape & Ecological Management Plan to be produced at the Reserved Matters stage.

Figure 10: Landscape design for Phase 1 SANG link.
Provided by Davies Landscape Architects.

Summary of SANG Quality Requirements

5.105 In order for the Wisley SANG to be fully effective in absorbing visits that would otherwise be made to the SPA, both by new residents but also existing residents in the local area, the SANG must be able to deliver certain features and qualities at first occupation. The SANG should be able to deliver the list of standard 'must have' and 'desirable' features recommended by Natural England in their SANG Quality Guidelines (NE, 2008). The Wisley SANG scheme has been tested against these standard criteria, the results of which are set out in **Table 11** below.

5.106 However given the particular context of the proposed development, including its proximity to the SPA, the SANG must also be able to respond to and deliver the particular features sought by users to the specific parts of the adjacent SPA that would otherwise be likely to receive an increase in visitation as a result of the proposed development. The results of the 2015 visitor survey of Ockham Common have therefore been examined to determine the site-specific features and qualities valued by visitors to the SPA, and **Table 12** sets out how these features and qualities have been incorporated within the SANG from first occupation, ensuring that the SANG will be fully effective.

Table 11: Natural England's 'Guidelines for the Creation of Suitable Alternative Natural Greenspace', 2008.

Must Have Features	Proposals
Adequate Car Parking	A SANG car park providing up to 100 spaces will be located towards the middle of the site strategically located at the furthest point from the SPA. Some spaces will be utilised by staff at the adjacent primary schools but a minimum of 30 spaces identified particularly for SANG use.
It should be possible to complete a circular walk of 2.3-2.5km around the SANGs	More than the minimum 2.3-2.5km circular walk has been accommodated within the proposed SANG area in Phase 1 (total 5.7km). Additional routes will become available in later SANGs and development phases to provide routes up to 9.5km.
Car parks easily accessible and well signed	The car park will be easily accessed off of the Ridgeway Avenue which will be signed from the A3 and Ockham Interchange (**Map 9**). This is the main east-west spine road as outlined on the scheme parameters.
Appropriate access points for target user groups	Access points from the SANG car park will be provided via the existing bridleway 544 to the northern SANG area and direct access to footpath 13A to the southern SANG area. Residents will have easy access from the housing areas directly into the SANGs via crossing points over ha-ha's or through proposed green infrastructure corridors between housing blocks. Residents from Elm Corner, Hatchford End, Martyrs Green and Ockham can gain access from existing

	footpaths that lead through green infrastructure into the SANG.
Safe pedestrian route from nearest car park	The proposed car park will provide safe pedestrian routes into the SANGs via existing PROW either located directly within SANG or within the SANG link.
Circular walks starting and finishing at car park	The northern SANG area is accessed via a SANG link utilising BW544. A shorter circular walk around the southern SANG area starts and stops at the SANG car park and has direct access to open space to exercise dogs.
Perceived by users to be safe, some open walking areas	Will remain predominantly open walking through woodland orchard and meadow creating different experiences for users.
Paths should be easily used and well maintained but most should be unsurfaced to avoid urban feel	Circular routes will comprise a natural and durable bound gravel surface providing a dry and easily accessible route year round and to attract users to move in an east x west direction rather than heading north into the SPA. Existing PROW will remain un-surfaced as will other walking routes within the SANG. Part of the walk through the southern SANG may be boardwalked in places south of the river, where required.
SANGs must be perceived as semi-natural spaces with little intrusion of artificial structures, except in vicinity of car parks. Visually sensitive way markers and benches are acceptable	The SANG areas will be designed as semi-natural spaces and accord with Natural England's guidelines for the creation of SANG. Appropriate natural and 'rustic' furnishings for the SANG will minimise the degree of artificial intrusion.
Variety of habitats	A variety of habitats and visual experiences will be provided through different types of woodland, meadow, short grassland, scrub, orchard and waterbodies supporting wetland habitats.
Unrestricted access, space for dogs to exercise	The SANG will be designed to enable dogs to be exercised freely and safely off the lead, and there will be a range of measures to keep pets contained within the SANG areas to include ha-ha's, wet ditches, planted areas on earth mounds and dog-proof fencing.
Free from unpleasant intrusions	The SANG will not be adversely affected by road noise (discussed further in **Section 7**). The transition from housing areas to the SANG will be designed sensitively to prevent urban intrusion.
Clear signposting & advertising	Appropriate timber waymarkers will be installed to indicate walking routes on site and signage will be promoted on the

Promoted by leaflet or websites	A3 and Ockham Interchange to advertise the SANG and car park/cafe. The new SANG and additional offsite walking routes will be advertised via a bespoke website and through dissemination of leaflets.
Desirable Features	**Proposals**
Safe to let dogs off lead between car park and SANG	Generous open areas, to the south of and connected to the car park, will be enclosed by dog proof fencing allowing dogs to be immediately let off the lead. The northern SANG area is not directly connected to the car park but is linked along a short route through green infrastructure.
Gently undulating topography	It is proposed to do some remodelling of the contours to create more visual interest and visual separation between footpaths. There will be no steep inclines within the SANG, except on the rise up the woodland tump which will act as a feature of interest, and on the rise up from the river valley in the Southern SANG
Interpretation panels at access points showing site layout and routes	Interpretation boards will be provided at the access points to the SANG, showing the walking routes provided and the features of interest within the site, including seating areas. Timber waymarkers will be provided around the SANG to mark out the walking route.
Open country character with areas of dense trees, scattered scrub or open water	Habitats within the SANG will mostly be open to include grassland; areas of shrubs, scrub and scattered trees; orchard, hedgerow; wet and dry woodland with an open understory; mature standard trees; and waterbodies supporting wetland habitats.
Focal point	A sculptural landform (the woodland tump) will provide a destination on the circular walk and long attractive views from its summit. Several ponds will also provide focal points within the SANG, as will a picnic area adjacent to the orchard.

Table 12: Features and Qualities Sought by Visitors to Ockham Common (also see **Appendix 5**)

Visitor survey question and result inferring feature or quality sought by SPA visitor	How this feature or quality has been accommodated within the Wisley SANG
Q. What features draw you to this site? *Answers:*	
• Ability to let dog off lead (56%- 89% of visitors were dog walkers);	- The SANG will provide large safe open and dry areas for dogs to be exercised off the lead year round.
• Good car parking (54%- 91% had arrived by car or van);	- The SANG will be served by a large dedicated SANG car park, which will be clearly signposted and advertised (to be delivered alongside introduced access restrictions to Pond car park on the SPA).
• It's close to where I live (44%);	- The SANG is located within 400m of all new housing, providing easy access on foot, a car park is also being provided for those that prefer to drive, and the SANG and its car park are directly to the south-west of the SPA making it as close to home (or in some cases closer) as the SPA for those currently visiting the SPA from the south.
• Length and variety of paths/tracks (36%- 65% of visitors were on site between 30 mins and 1 hour, taking an average route of 2.9km. 75% of visitors took a route of 3.7km or less. The maximum route length taken was 4.6km. 69% of routes taken during the survey were similar to routes taken on other visits);	- The SANG and GI network provide numerous paths of varying surface types and lengths, passing through a variety of semi-natural habitats. Route options accommodating the average, majority and exceeding the maximum lengths taken on the SPA will be provided at first occupation within the SANG.
• Look and feel of the site (32%).	- The main area accessed on Ockham Common incorporates areas of both open and closed habitat types, comprising woodland, heathland, scrub, grassland

	and open water. Liley et al. 2005b in their study of features attracting people to open spaces in the TBH area concluded that *"it is perhaps visual interest and variety within a small area that is attractive to people, rather than particular features"* and *"the actual habitat and landscape would seem to be of less importance, especially for dog walkers. However ideal sites would contain semi-natural habitats, with woodland preferred, and the results appear to suggest ideal sites would have water (such as a lake or pool) and have varying topography"*. To that end, although the SANG will not provide an identical 'look and feel' to Ockham Common, the SANG aligns with the description of an 'ideal site' provided by Liley et al. and will provide a variety of open and closed habitats comprising woodland, scrub, grassland and open water- habitats that are found on the SPA and are likely to provide the variety and visual interest sought by SPA users.
Q. What are your reasons for choosing this alternative site? *Answers:* • Makes a change/for variety (30%); • More convenient/it's closer (26%);	- As described above, the SANG is located within 400m of all new housing, providing easy and convenient access on foot; a car park is also being provided for those that prefer to drive, and the SANG and its car park are directly to the south-west of the SPA making it as close to home (or in some cases closer) as the SPA for those currently visiting the SPA.
• Good car parking (20%);	- As described above, the SANG will be served by a large dedicated SANG car park, which will be clearly signposted and advertised.
• Ability to let dog off lead (16%).	- As described above, the SANG will provide large safe and dry open areas for dogs to be exercised off the lead year round.
Q. Would you use new open spaces if they were provided in the local area? *Answers:* • Yes (53%); • Yes, but only if • dog friendly (13%);	- As described above, the SANG will provide large safe dry open areas for dogs to be exercised off the lead year round. It will provide a variety of habitats both open and

	closed for dogs to explore, areas of short open grassland for owners to throw balls for their dogs, and a variety of waterbodies of differing sizes for dogs to splash and swim in. Paths comprised of bound aggregate will also provide year round all weather (mud free) access to the SANG. The Wisley and Ockham Warden will also coordinate organised dog walking activities to engage the local dog walking community to achieve the desired behavioural changes with regards to recreation both within the SANG and the SPA (described further below).
• had parking (13%); • it had the right features/character (8%); • close to home (7%); • large and open (5%).	- Described above. - Described above. - Described above. - The SANG totals nearly 50ha in extent, is large enough to accommodate the maximum lengths of routes taken on the SPA, and provides open grassland habitats and a tump providing expansive views across the North Downs, the SANG may therefore be considered to meet the criteria of being 'large and open'.

SANG Phasing

5.107 For large multi-phase developments such as that proposed at Wisley, the phasing of SANG alongside the phasing of construction and housing occupation is an established approach. With reference to the consented SANGs listed in **Table 7**, the SANG provision at Wellesley and Deepcut Princess Royal Barracks are understood to have been phased, as are numerous other SANGs across the TBH region.

5.108 In order to ensure that the phased delivery of SANG does not compromise its ability to secure impact avoidance, the quality features required to make the SANG attractive and effective must be delivered from first occupation to ensure that the desired habits regarding the use of the SANG are established from the outset.

5.109 To that end, the scheme has been revised from that originally proposed, to deliver the majority of the SANG at first occupation (77% of the total area). All of the required quality features listed in **Tables 11** and **12** above will be delivered within the first phase of SANG, with the remaining small additional areas of SANG delivered in three subsequent phases (**Map 11**) dictated by the progress of construction and housing occupation triggering the requirement for release of further SANG area capacity.

5.110 The development will be constructed as four neighbourhoods in four phases working from west to east served by a construction access road located to the south of the neighbourhood blocks and to the north of the southern SANG.

5.111 In order to ensure that the suite of newly created SANG habitats are sufficiently established and mature at first occupation to be both attractive and to possess the qualities required to ensure that the SANG is effective, habitat creation works comprising advance planting and other measures such as the incorporation of mature trees, to be prescribed within the Phase 1 SANG LEMP (and LEMPs for future SANG phases), will be completed at least two growing seasons ahead of first occupation. The applicants intend to submit the necessary detailed information for the first phase of SANG so that it can be implemented soon after the grant of planning permission. **Appendix 7** provides further information regarding timescales for habitat creation, including examples from previous EPR habitat creation work, to demonstrate that suitably mature habitats can be created within two growing seasons.

5.112 **Table 12** below identifies the sequence of works associated with SANG phasing assuming that a resolution to grant planning permission is achieved by January 2016, further detail regarding the description of works is provided in the Outline SANG Habitat Creation & Management Plan (EPR, 2015). It also sets out the number of houses each Phase can support, such that the SANG phasing plan can be adjusted alongside future review of housing delivery rates; there must always be sufficient SANG available in advance of occupation of dwellings.

Table 12: SANG Phasing works and SANG release triggers.

Phase	Area per Phase	Cumulative Area	Completion Year	Description of Implementation Works
1	38.7ha	38.4ha	2017/2018	• Earth mounding along the northern perimeter of central and western areas of northern SANG. • Construction of drainage ditches and ponds. • Creation of gentle undulations across the northern arable fields of central and western areas. • Strategic planting. • Creation of a 3.9km circular route within the northern SANGS with bound aggregate. • Sow northern arable fields with conservation grass mix. • Construction of boardwalk, bridges and paths in southern SANG area. • Construction of SANGs Car Park, to accommodate a minimum of 50 parking spaces.

				• Construction of SANGs Link between car park and Phase 1 SANG area.
Estimated earliest occupation - 2018; Using a 1.74% SANG capacity discounting rate across all SANG areas (49.9 → 49.03ha = 1.74% discount) and a provision rate of 10.174ha/1,000 across phases, SANG Phase 1 has capacity to serve 1,557 houses.				
2	2.1ha	40.5ha	2026/2027	• Further construction of drainage ditches and ponds. • Additional path creation. • Additional planting. • Further grassland sowing.
Using a 1.74% SANG capacity discounting rate, SANG Phase 2 has capacity to serve 85 houses; SANG Phase 2 to be delivered before the 1558th housing occupation.				
3	8.4ha	48.9ha	2027/2028	• Additional earth mounding to the north east. • Further grassland sowing. • Additional planting. • Orchard creation. • Completion of Tump and seeding.
Using a 1.74% SANG capacity discounting rate, SANG Phase 3 has capacity to serve 338 houses; to be delivered before the 1,643rd housing occupation.				
4	0.7ha	49.9ha	2028/2029	• Removal of temporary Construction Access Route. • Further grassland sowing. • Additional planting. • Extension of main car park.
Using a 1.74% SANG capacity discounting rate, SANG Phase 4 has capacity to serve 29 houses; to be delivered before the 1,981st housing occupation.				

SANG Permeability, Accessibility and Intercept Potential

5.113 Natural England's SANG Guidelines (2008) note that where SPA access points were at existing housing estates, up to 100% of the users surveyed (Liley et al., 2005) arrived on foot. Indeed research carried out by EPR elsewhere within the region has found that people often prefer to arrive on foot, where possible.

5.114 This indicates that accessibility of the proposed SANG on foot is likely to be a key attribute ensuring that it becomes well used by future residents of Wisley Airfield.

5.115 Natural England's (NE, 2009) SANG Guidelines describe 400m as an 'easy walking distance'. Since all of the proposed new housing is located within 400m of the SANG (**Map**

2) the residents of the new housing will be able to easily and conveniently enter the SANG network on foot, making accessing the SANG on foot more convenient and preferable than entering a car to access the SPA.

5.116 As described above, the SANG has been designed to incorporate features sought by SPA visitors in general, as well as specific features sought within the nearby Ockham Common, including safe and convenient areas for walking and dog walking, including most notably dog off lead walking, a variety of attractive semi-natural habitats, a varied and lengthy network of well-maintained all weather paths, and ample car parking, a café and visitor centre.

5.117 The 2015 visitor survey (**Appendix 5**) found that nearly a third of SPA visitors interviewed visit alternative open spaces for a change/for variety and only 1% of SPA visitors interviewed said that they would not use new open space if it was provided in the local area; just over half of users said that they would visit new open space, and a further half (46%) said that they would use new open space if it met certain criteria, criteria that have been accommodated within the SANG as described above at **Table 12**. The SANG therefore has the potential to intercept a proportion of existing visits made to the SPA, offsetting visits made to the SPA by new residents

5.118 Existing residents at Elm Corner, Hatchford End and Martyrs Green lie within the 400m walking catchment of the proposed SANG, and so may make use of the SANGs rather than visiting the SPA.

5.119 The site is crossed by four north-south Public Rights of Way that include two Bridleways. Two further footpaths enter the site from the A3 running east-west following the runway and northern margins of the wooded Stratford Brook as far as Bridgend Farm. These are:

- FP13 - Runs from the site's western entrance along the runway before dropping down to Ockham Lane to the southeast of the site;
- FP13A - Runs parallel to FP13 along the southern boundary before adjoining FP13 at Hatch Lane;
- BW544 - Runs from Wisley Gardens, under the A3, across the site before joinging Hyde Lane;
- FP15 - Runs south from Elm Corner to Ockham;
- BW16 runs south from Wilderness Farm to Hatch Lane; and,
- FP16 - Runs southwest from Hatchford End to the eastern end corner of Ockham Village.

5.120 These existing PROW will increase the likelihood of existing SPA visitors encountering the SANG and diverting a proportion of visits to it, and the SANG has been designed to encourage movement from the PROW into the SANG via strategically located focal points which will draw users along the well-surfaced east-west circular route rather than along the undistinguished northward PROW.

5.121 Once in the SANG, the SANG is large enough to accommodate the maximum length of recreational route that would otherwise be pursued on the SPA and the variety of habitats

and features that are sought on the SPA, such that continuation of a visit beyond the SANG along the PROW and into the SPA is not required in order to achieve a satisfactory recreational excursion.

5.122 A significantly larger number of existing (and potential SPA visiting) households are located within the 5km catchment of the Wisley Airfield SANG (the catchment generated by SANGs of more than 20ha, JSPB 2009), than will be created as part of the Proposed Development, and a car park with 100 spaces serving the School, SANG and village centre, with 30 of those spaces dedicated to visitors to the SANG will be provided (roughly 1 space per ha of SANG) that will be easily accessible and clearly signposted from the A3 (**Map 9**), making the SANG accessible to existing SPA visitors living within this catchment.

5.123 Examination of the postcode dataset reveals that 27,790 households (including potential SPA visiting households) are located within the catchment of the Wisley Airfield SANGs compared to the 2,008 new dwellings proposed. As described above at **Table 6**, it is possible to predict, on an approximate basis, that each household might generate an average of 12 SPA visits per year (5 visits per person, with 2.4 people per household). 2,008 new dwellings at Wisley might therefore generate an additional 24,096 SPA visits per year, in the absence of SANG provision, whilst 27,790 households might generate 333,480 SPA visits per year. Up to 357,576 visits to the SPA would therefore expect to be made to the SPA each year by new and existing houses located within the catchment for the Wisley SANG, in the absence of SANG provision.

5.124 In order to offset the visits to the SPA made by the new development, the SANG would need to intercept 6.7% of SPA bound visits per household located within the catchment for the Wisley SANG (including those made by the new development), equating to 0.8 (less than 1) visits per year.

5.125 It is reasonable to assume that at least 1 visit to the Wisley SANG might be made in lieu of a visit to the SPA per household per year for those households living within the catchment for the SANG given that: surveys to date have shown that people visiting the SPA visit a variety of other open spaces for recreation; that it is reasonable to assume that people living within a catchment for a SANG would be likely to use it on occasion; and that 99% of people interviewed at Ockham Common said that they would use new open space in the local area if it were provided (and incorporated the right features, as described in **Table 12**), ; such that an overall balance of visitation to the SPA would be achieved- that is, no net increase in visitation to the SPA. In reality, more than 1 visit per household per year may be intercepted by the SANG, achieving a net reduction in visits to the SPA.

5.126 Because proximity to home is an important factor influencing the selection of open spaces (Liley et al. 2005, Fearnley & Liley, 2012; **Appendix 5**) households living closer to the SPA would be expected to make a higher number of visits per year to the SPA than the average (although the South East Plan EiP Assessor found no evidence to suggest that the proportion of visitation increased significantly with increasing proximity to the SPA within the 5km SPA zone, Burley, 2007- paragraph 4.8.3); but equally an effective SANG would be expected to intercept a higher proportion of SPA visits made by houses located closer to the SANG than the SPA (including those generated by the new development). Assuming 'all things being equal' therefore, and that the SANG has accommodated features and qualities rendering it

an attractive alternative to the SPA (discussed above), the figures set out above provide a useful analysis of what is likely to be required of the Wisley SANG in terms of SPA visit interception in order to achieve no net increase in overall visitation.

5.127 The SANG has, however, incorporated features that are likely to be particularly attractive to the key SPA user group- dog walkers- by way of the provision of large safe and dry open areas for exercising of dogs off the lead (the main reason people had visited Ockham Common during the 2015 visitor survey) close to home, the incorporation of specific features to ensure that dogs can have fun on their walk such as short grassland areas for ball/frisbee throwing and waterbodies for dogs to swim in, and the provision of all-weather paths so that dogs can be walked year round without getting muddy. This combined with implementation of a behavioural change strategy on the SPA via the proposed SAMM-plus wardening and educational provision (described further below and in **Appendix 9**) to promote dog on lead walking during the bird nesting season, and around livestock, mean that the SANG is likely to become even more attractive than the SPA to dog walkers, further increasing the probability that visits currently made on the SPA will be redirected to the SANG ensuring no net increase in recreational pressure on the SPA.

5.128 Furthermore, the transport mitigation measures (refer to 5.23 *et seq.*) propose the blocking of through traffic along Old Lane and re-routing of traffic through the Site; this has the additional potential to increase the probability of SPA-bound visits being intercepted by the SANG.

5.129 In summary therefore, the proposed Wisley Airfield SANG given its scale, location, accessibility and composite quality features is anticipated to provide a suitable alternative recreational destination to the nearest component unit of the Thames Basin Heaths SPA such that a high proportion of new, and a proportion of existing, recreational visits that might otherwise be made on the SPA would be diverted to the SANG.

5.130 Given the number of existing SPA visiting households located within the catchment of the Wisley Airfield SANG, the accessibility of the SANG on foot and by car for both new and existing local residents, and the high proportion of existing SPA visitors interviewed at Ockham Common who said that they would use new open space in the local area if it were provided, the provision of a circa 50ha new semi-natural open space promoted for recreation adjacent to the SPA is anticipated to secure no net increase in visitation to the SPA alongside the proposed development.

5.131 The SANG provision made alongside the SAMM-plus contribution described below, which aims to manage public access to the SPA and further increase the attractiveness of the SANG in comparison to the SPA specifically for dog walkers, provides further certainty that the SANG will be able to secure no net increase in visitation to the SPA.

Management of the SANG & Legal Agreement

5.132 A separate Outline SANG Habitat Creation & Management Plan has been prepared for submission which sets out in greater detail the habitats that will be created in the SANG, and the way in which they will be managed in perpetuity to ensure that the SANG remains attractive and effective. Public access within the SANG and effective management and

maintenance of the SANG will be overseen by the Wisley and Ockham Warden Service described further below under 'SAMM Plus' and in **Appendix 10**. Prescriptions and a detailed cost assessment for capital works, capital replacements, in perpetuity management and maintenance tasks, and warden provision, have also been provided to the relevant consultees and to inform negotiations with potential future stewards of the SANG.

5.133 A number of options are available for the long-term management and maintenance of the SANG, including:

- Adoption by public or charitable bodies such as a local authority or wildlife trust; or
- Adoption and/or management of the SANGs via either a Community Land Trust or management company.

5.134 An appropriate legal agreement would need to be drafted prior to the grant of consent to secure the delivery of the SANG and its management in perpetuity.

Strategic Access Management and Monitoring: SAMM

5.135 Access management and monitoring has always been considered an essential accompaniment to the provision of SANGs as part of the overarching impact avoidance and mitigation strategy for the Thames Basin Heaths SPA. Indeed the South East Plan EiP Assessor commented *"The provision of such spaces [SANGs] will in my view be likely to have some impact on usage of the SPA. It may not be enough to mitigate all adverse affects arising from new housing on its own but if it was combined with habitat and access management I am satisfied that overall it would be likely to have a positive impact in limiting the growth of visitor pressure on the SPA."* (Burley, 2007).

5.136 Contribution to the TBH-wide SAMM Project is therefore required from Proposed Developments in order to deliver access management measures and monitoring on the SPA to address any residual effects arising from new housing, or in other terms the potential for visits from new residents to not be fully offset through the provision of SANG.

5.137 Natural England's SAMM Tariff Guidance document (March, 2011) sets out at Appendix 3 that:

"The Strategic Access Management and Monitoring project will secure the employment of a Project Co-ordinator and one Warden initially, and then later (as funds allow) an Education Officer and further warden staff. These staff will work with existing rangers and wardens to provide consistent messages to SPA visitors and promote use of the SANGs.

The project also includes a monitoring strategy which will measure both visitor use (of the SPA and the SANGs) and populations of the three SPA birds to ensure that the avoidance and mitigation measures are functioning effectively to avoid any adverse impact of development on the bird populations.

The SAMM project will provide a presence on all sites comprising the SPA but will focus resources according to clear priorities. The priority sites will be those where it is possible to have the greatest influence on visitor behaviour and appreciation of the SPA." [our emphasis]

5.138 Owing to the nature of the project, the measures delivered are unlikely to have a strong focus on any one SPA 'patch', and may not be especially targeted to Wisley and Ockham Commons SSSI, nevertheless the necessary contribution will be made to ensure an appropriate contribution to the strategic access management and monitoring efforts being coordinated across the TBH SPA, but in addition to this a package of 'SAMM Plus' measures will also be provided to assist with lowering the baseline of recreational pressure on Wisley and Ockham Commons SSSI such that a significant effect on this component unit of the SPA as a result of the Proposed Development is not likely.

SAMM Plus

5.139 Owing to the proximity of the Application Site to the SPA, and the number of PROWs which run through the site and proposed SANG to the SPA, a package of additional bespoke and site specific access management and monitoring measures is proposed to ensure no likely significant effect on the SPA. This package, intended to address any potential for residual impact on the SPA despite the provision of what is considered likely to be a fully effective SANG, comprises the following key elements which are described in more detail below:

- Funding and promotion of offsite PROW improvements;
- Funding and/or provision of a dedicated Wisley and Ockham Warden Service; and
- A package of public education measures.

Offsite PROW Improvements

5.140 In addition to the provision of SANG which will provide an alternative recreational resource for new and existing residents in and around the Application Site, funding and promotion of an additional offsite recreational route comprising Public Rights of Way (PROWs), is proposed as shown on **Map 12** and described below.

5.141 The route, measuring 4.2km, starts and ends at the Application Site providing a wider variety of interconnected and interchangeable recreational countryside route options. The route heads south of the Application Site and away from the SPA.

5.142 Provision will be made (by way of S106 Agreement) for ongoing localised spot-treatment of existing PROW and an improved and integrated signage network to ensure dry navigable routes whilst retaining the rural countryside feel. The route will be promoted on a bespoke Website where the option to download information about the walking route (length, timing, features along the way) into a smart phone app such as Strava, or into a Garmin device, will be possible. Information about this alternative recreational route will also be provided in the

information packs/leaflets provided to new and existing residents, as well as provided at the SANG car park and café, and at other local information points.

5.143 Visitor surveys have shown that people like to visit a number of different sites for recreation, and so seek variety in their recreational experiences. The more variety in alternative sites and recreational routes provided, the higher the probability of existing SPA visits being diverted. Indeed the Appeal decision of C L Sherratt in Martin Grant Homes vs Hart DC (APP/N1730/A/14/2228404, Land west of Redfields Lane, Church Crookham) found that *"linkages to other footpaths and SANGs through other green linkages are not a requisite for a SANG of the size proposed and where a 2.3 km walk can be achieved within it. The availability of linkages are nevertheless beneficial and add to the attractiveness of the SANG as an alternative to the TBH SPA."* [our emphasis]. Therefore in combination with the SANG, promotion of this alternative recreational route is likely to increase the number of diverted SPA visits, further offsetting any visits made to the SPA by the new residents.

Wisley and Ockham Warden Service

5.144 A number of factors contribute to whether a visit to the SPA results in negative effects on its habitats and Annex 1 birds, including, but not limited to the following:

- Whether responsible behaviour is exhibited during the visit, such as ensuring that dog waste is collected and disposed of appropriately, similarly that rubbish and cigarette ends are not discarded, whether dogs are kept on leads during the bird nesting season and whether people and dogs keep to the main footpaths and do not trample through habitats;
- The route walked within the SPA and its proximity to known centres of bird territories;
- The structure of habitats in place along the routes that provide visual screening, and so act to reduce disturbance to adjacent nesting birds; and
- Whether appropriate signage and information is in place to educate people about making a responsible visit to the SPA.

5.145 Fearnley & Liley (2012) note that:

"in order to consider changes [in visitor numbers] *in terms of the ecological impacts, it is necessary to relate visitor patterns to ecological data, for example by analysing bird data with the visitor data, and considering direct impacts (such as disturbance to birds on the nest, fire incidence, or changes in dog fouling levels, for example)".*

5.146 Whether changes in visitor numbers to a site conflict with the conservation objectives for that site, that is whether a visit actually results in impacts upon its qualifying features, will depend on any measures that are in place to manage the aforementioned factors.

5.147 Research has shown that some forms of public access are more disturbing to birds than others, in particular dogs being walked off the lead during the bird nesting season, therefore some aspects regarding responsible recreation can be targeted for improvement in order to maximise the extent to which recreational pressure on the Annex 1 birds can be reduced.

5.148 Since walking dogs off the lead is one of the main reasons that dog walkers, who comprise the largest user group of the SPA, visit the site (as revealed by the 2015 visitor survey and previous surveys undertaken by Liley et al.) promotion of responsible recreation, and specifically dog on lead walking during the bird nesting season, is likely to decrease the appeal of the SPA to those users seeking to visit to exercise their dog off the lead and increase the appeal of nearby open spaces, such as the Wisley SANG, where dogs can be exercised freely off the lead.

5.149 Surrey Wildlife Trust's Wisley & Ockham Commons Management Plan 2010-2020 proposes measures (under Feature 6) to manage the effects of increased visitor numbers, which include provision of interpretation, maintenance of paths and rights of way to a high standard, removing fly-tipped waste and litter, maintenance of regular contact with local community groups and patrol of the site to identify necessary actions, and undertaking at least two guided walks each year.

5.150 However the focus for SWT rangers is habitat management, and there is insufficient resource capacity for active wardening of the site, public engagement and promotion of responsible recreation. As an example, temporary notices are erected on main access points and information boards during the bird nesting season to request dog on lead walking, but there is no policy or capacity for such behaviour to be enforced. The general public are believed to be largely unaware of the particular sensitivities of the site, the ground nesting habits of its important bird species, and the ways in which they can reduce the impact of their visit on such species, therefore the site is subject to public access issues such as dogs running into sensitive areas whilst off the lead, dog fouling and desire line creation. The signage onsite is also outdated, and the walking route promoted on the internet and via leaflets (**Appendix 8**) and signage provided on site takes users directly to the most sensitive bird nesting area to the east of Old Lane on Ockham Common. There is therefore a need for dedicated wardening and improved public education to help address impacts arising from current and future visits.

5.151 Funding is therefore proposed to provide a dedicated Wisley and Ockham Warden Service, which is to be supported by further funding of public education measures as described further below. The Wardening provision would cover not only the SPA, but also the Wisley SANG and offsite walking route, providing an integrated approach to access management, public education and monitoring within the area.

5.152 Wardening efforts within Wisley and Ockham would also need to link up with the wider Thames Basin Heaths SAMM Project to ensure that consistent messages are conveyed to visitors within the SPA and offsite areas (SANG and PROWs) respectively.

5.153 The wardening role would therefore be diverse and consist of the following key priorities:

- Patrolling the SPA to positively engage with the public and implement the behavioural change strategy set out at **Appendix 9** in accordance with the following essential criteria as a minimum provision (as may be adapted in liaison with NE and SWT):
    - daily (including weekend) patrolling on the SPA during the spring and summer timed to coincide with peak periods of visitor access (7-9am and 5-7pm between Mondays and Fridays, and between 9am and 5pm on Saturdays and Sundays; with times adjusted in the winter to reflect daylight hours but to maintain a daily warden presence on site) and focussed on key areas that are subject to the greatest visitor pressure (for example the areas and routes identified by SWT on Figure 7 of their Management Plan as being subject to the greatest visitor pressure and the hotspot areas of recreational pressure highlighted on **Map 6**) and/or are most sensitive to visitor access;
    - increase awareness regarding the site's sensitive features and the impacts that a visit to the SPA can cause by way of public education;
    - promotion (and/or request) of desired responsible recreational behaviours, specifically dog on lead walking during the bird nesting season, collection of dog waste, and use of existing paths, engaging proactively with the public to acknowledge those people using the site responsibly and directly addressing harmful activity on the spot, helping to manage visits to minimise any negative impacts upon the site's qualifying features and decrease the relative attractiveness of the SPA to those users seeking dog off lead access;
    - increasing awareness about alternative options for recreation away from the SPA, including specifically the Wisley SANG, and in particular why such sites may be more desirable to particular SPA users including dog walkers, thereby increasing the relative attractiveness of the SANG and the potential for the baseline number of visits to the SPA to be maintained or reduced;
- Patrolling the SANG and offsite PROWs to engage the local community, particularly the dog walking community, and encourage activity away from the SPA;
- Patrolling the SANG to identify ongoing management and maintenance issues and to ensure appropriate action is taken to ensure the ongoing attractiveness and efficacy of the SANG;
- Coordinating organised walking and dog walking groups and other activities to engage the local community, encourage activity away from the SPA, and further promote responsible recreation as per the behavioural change strategy set out at **Appendix 9**, as has proven successful in Dorset with projects such as 'Dorset Dogs';
- Liaising with TBH SAMM Project Wardens working across the wider TBH area to seek a fully integrated supplementary wardening provision, and to provide feedback to the TBH SAMM Project;
- Providing ongoing monitoring and assessment of public access impacts on the SPA through maintenance of an access incident log and monitoring of visitor

access to the SANG and SPA following a methodology to be agreed with Natural England, the results of which will be reviewed against Annex 1 bird data, in order to identify any residual effects arising from the proposed development and to devise a means for managing significant residual impacts, eg. Through onsite access and habitat management measures (see below), and

- Providing input to the targeted design and implementation of onsite access and habitat management measures, for example redesigning the walking routes promoted onsite to avoid the most sensitive ground nesting bird areas, implementing a dog zoning policy within the site, installation of temporary measures to prevent the formation of desire lines, strategic habitat management to dissuade the formation of unwanted desire lines and input to other ongoing site management activities that are most likely to achieve the desired access management outcomes and responsible behaviour

5.154 1.5 full time equivalent roles are anticipated to be required to achieve the above actions, further detail regarding the role profile of the Wisley and Ockham Warden Service is provided at **Appendix 10**.

5.155 Active wardening via the Urban Heaths Partnership has been an important component to Strategic Access Management and Monitoring in Dorset, and continues to be funded through the Dorset Heathlands Planning Framework SPD, including through the 2015-2020 Consultation Draft. The TBH SAMM Project is another particularly relevant example of the importance of wardening and access management initiatives in managing the residual effects of wide-scale development across the region. Wardening has also more recently been part of the accepted solution for the Solent Disturbance and Mitigation project and North Kent SAMM Strategy.

5.156 The provision of a dedicated warden for the Wisley and Ockham area is therefore anticipated to:

- assist in securing diversion of SPA visits to the Wisley SANG;
- maintaining or even lowering the baseline rate of visitation to the SPA; and
- reducing the prevalence of visits resulting in negative effects on the Annex 1 birds.

5.157 It therefore represents a valuable contribution towards ensuring that the conservation objectives for the SPA are achieved alongside ongoing efforts by SWT to restore favourable condition to the SSSI through habitat management and other site maintenance works, and provides an effective means by which any residual effects arising from the proposed development are addressed.

5.158 Further to this and as described further at **Appendix 9**, Wisley Property Investments Ltd. are committed to exploring with Surrey County Council as landowner, and Surrey Wildlife Trust as land manager, the potential for securing, as part of the SAMM-plus package, designation of the parts of Ockham Common not already registered as Common Land under Section 16 of the CRoW Act 2000.

5.159 This would provide further means, beyond the key principles for positive community engagement and education described above, to achieve dog on lead walking during the bird nesting season. As has been described above, this would provide further certainty that dog on lead walking could be achieved on the SPA, helping to tip the balance of the SPA's relative attractiveness to its key user group (dog walkers) and thus probability for visitation, in favour of the Wisley SANG, when considered alongside the wider wardening and public education efforts. It would also maximise the potential for reducing impacts associated with ongoing visitation to the SPA.

5.160 In order to determine the viability of such a designation, the extent of the Registered Common Land is to be reviewed, and the desirability of the designation and its consequent implications for public access is to be discussed with SCC/SWT who have indicated that, subject to full evaluation, neither party has an early issue with the proposal.

5.161 Should further designation of the land be viable and desirable, this would be achieved as part of the Wisley Airfield SAMM-plus package. Further allowance has therefore been made within the SAMM costing assessment to facilitate enforcement action under the CRoW Act, as and when required, on the presumption that the designation will be possible.

Public Education

5.162 In addition to signage and promotion of the SANG and the improved offsite recreational route within the development and the local area, including creation of a website and production of information packs/leaflets, and provision of a Warden Service to coordinate public education initiatives locally, funding will also be made available to improve signage and interpretative material provided within Wisley and Ockham Commons SSSI, as set out within the behavioural change strategy provided at **Appendix 9**. This will ensure a consistent message regarding public access and responsible recreation within the SANG and SPA, helping to maximise diversion of visits that would otherwise be made to the SPA to the SANG, whilst ensuring that visits continuing to be made to the SPA do not result in negative impacts upon the site's qualifying features.

Delivery of SAMM Plus Measures

5.163 Alongside costing for the creation and ongoing management of the SANG, a detailed costing assessment has also been undertaken for the above SAMM Plus measures, which are also to be funded in perpetuity, to underpin and ensure robustness of future legal agreement(s).

5.164 The necessary funding for the PROW improvements will be provided to SCC via GBC, as secured by appropriate legal agreement. SCC has confirmed in pre-application consultation that they are willing to accept funds for the purpose of enhancing the proposed route.

5.165 The wardening service would either be managed by a Community Land Trust or management company established to manage the SANG, by a local authority or wildlife trust, or a combination of the above, again with the necessary funding secured by appropriate legal agreement.

5.166 Delivery of the Behavioural Change Strategy set out in **Appendix 9** can be secured by appropriate planning obligation or condition.

Conclusion

5.167 The proposals comprise an extensive and bespoke package of impact avoidance and mitigation measures that aim to divert visits from the SPA that would otherwise be made by new and existing residents through the provision of SANG at a greater than standard rate, and on a scale that can accommodate the key quality features sought on the SPA, and through the improvement and promotion of an additional offsite recreational route, but also by helping to manage the effects of public access to the SPA, through the provision of a dedicated Wisley and Ockham warden and public education initiatives, to reduce the incidence of visits resulting in negative effects on the SPA habitats and Annex 1 birds. As such the proposals are not likely to conflict with the Conservation Objectives for the SPA.

5.168 Therefore through these focussed and integrated site specific provisions, made in perpetuity, it is concluded that the Proposed Development is not likely to have a significant effect on the Thames Basin Heaths SPA when considered alone, nor to adversely affect its integrity, as a result of increased recreational pressure.

6. CAT PREDATION

Introduction

6.1 This section considers the potential for an increase in cat predation as a result of the Proposed Development and whether such effects could impact upon qualifying SPA birds.

Receptor Sensitivity

6.2 Cats are voracious predators of wildlife including birds, and ground-nesting birds are particularly vulnerable whilst nesting. A survey performed in 1997 reported that nine million British cats brought home 92 million prey items over a five-month period (Woods et al. 1997). A large proportion of domestic cats are found in urban situations, indeed the Pet Food Manufacturers Association reports that 21% of households in the South East own a cat, therefore increases in housing numbers is likely to lead to increased cat ownership and increased cat predation.

Defining the Zone of Influence

6.3 The TBH SPA Delivery Framework incorporates a 400m exclusion zone around the SPA in part owing to the predominant roaming distance of cats (JSPB, 2009). The Zone of Influence within which cat predation is likely to occur would therefore extend to a 400m distance from development areas subject to a net increase in dwellings.

Assessment of Likely Significant Effects

Construction Phase

6.4 There are no predicted impacts from increased cat predation associated with the construction phase.

Operational Phase

6.5 The Proposed Development will result in a net increase in 2,000 potentially cat owning dwellings (C2 Use Classes are discounted as described in **Section 5**), therefore the development is likely to result in an increase in the local cat population by at least 420 cats. Since the Proposed Development respects the 400m exclusion zone, all new dwellings are located more than 400m from the SPA, which is the predominant cat roaming distance (Burley, 2007), and therefore extensive cat roaming within the SPA is unlikely. Even if cats do roam further from their homes, which tends to be associated with more rural settings, they would need to move a distance of 800m or more to access the core Annex 1 bird territory areas to the east of Old Lane (**Map 13**), and cats are unlikely to cross the A3 to Wisley Common. As a result, a significant increase in cat predation on Annex 1 birds is not considered to be likely.

Conclusion

6.6 Owing to the distance between new housing areas and the SPA, and specifically areas comprising Annex 1 bird territories, a likely significant effect on the SPA as a result of increased cat predation is not anticipated.

7. NOISE

Introduction

7.1 This section considers potential adverse effects due to the Proposed Development on International Sites based on noise modelling undertaken by WSP. This section is based on the detailed assessment of noise presented in Chapter 9 of the ES.

7.2 The data from noise modelling has been used here to make an assessment of potential adverse effects from noise generated during the construction phase, and from transportation noise during the operation phase of the Proposed Development, in the absence of impact avoidance and mitigation measures.

Receptor Sensitivity

Noise Effects on Birds

7.3 The response of birds to noise has been widely studied, although a recent review of published research (Radford *et al.*, 2012) concluded that there was little reliable evidence of the effects noise had on birds (and other wildlife) that could not otherwise be attributed to other effects. However, birds certainly do respond to noise and the Environment Agency's Air Quality Technical Advisory Group guidance (EA 2004) indicates that continuous noise levels exceeding 55 dB (1 hour L_{Aeq}) and loud but discontinuous noise events exceeding 85 dB (maximum, L_{Amax}) may have adverse effects on the breeding behaviour of some bird species. However, adverse impacts from continuous noise are not universal and instances of adaptation by some species to background noise have been identified.

Noise Effects within Proposed SANG

7.4 BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' advocates an upper guideline value of 55 dB $L_{Aeq,T}$ external amenity space, however this is focussed on personal gardens/balconies and isn't directly applicable to shared external amenity areas.

7.5 There is currently no UK guidance specifying or recommending limits for short-term noise exposure within shared outdoor amenity areas. In respect of 'outdoor parkland and conservation areas' the World Health Organisation's Guidelines for Community Noise identifies 'disruption of tranquillity' as the critical health effect, and does not quantify an upper noise limit. Table 4.1 of the GCN does recommend, however, that "*existing quiet outdoor areas should be preserved and the ratio of intruding noise to natural background sound should be kept low*"

Defining the Zone of Influence

7.6 The extent of the study area included the Application Site itself and sensitive receptors beyond the Application Site boundary. The extent of the study area beyond the Application

Site boundary is defined by the proximity of the existing noise and vibration sensitive uses to the Application Site.

7.7 The potential Zone of Influence encompasses those parts of the Site and adjacent designated areas where noise levels are predicted to increase above the thresholds for SPA birds. The closest point of the SPA/SSSI boundary is approximately 70m from the Application Site. Noise levels within the proposed SANG were also assessed which lies entirely within the Site boundary.

Assessment Methodology

7.8 To determine the baseline noise environment across the Site, noise measurements were taken at monitoring locations at four points across the site.

7.9 Monitoring was undertaken at the following locations:

- In the west of the Application Site, close to the A3;
- In the north of the Application Site;
- In the east of the Application site adjacent to Old Lane; and
- In the south-eastern area of the Application site adjacent to Ockham Lane.

7.10 Operational noise contours with regards to the Site and proposed SANG are shown on **Map 14**.

Assessment of Likely Significant Effects

Construction Phase

Impact on SPA Birds

7.11 Construction noise levels have been predicted at the closest area of the SPA to the site, which is to the north of Elm Lane. The noise levels have been predicted for each stage of the construction process and are set out in **Table 13** below.

Table 13: Predicted Construction Noise Levels at SPA, Free- field, dB $L_{Aeq,T}$.

Receptor	Site Preparation	Ground Works	Foundation Works	Super-structure
SPA	58	57	38	39

7.12 **Table 13** shows that the predicted noise level during construction could reach 58dB. However, this is predicted for land immediately to the north of Elm Lane, and noise levels are likely to considerably attenuate before reaching more distant parts of Ockham Common

that support Annex 1 bird territories (**Map 3**). A significant impact on Annex 1 birds as a result of noise levels during the construction phase is not therefore anticipated.

Operational Phase

Impact on SPA Birds

7.13 An assessment has been undertaken to determine the change in noise levels on the surrounding roads as a result of development-related vehicle movements. **Table 14** below details the changes on the roads that are adjacent to the SPA, where traffic data are available. The comparison is between the '2031 baseline plus committed developments' scenario and the '2031 baseline plus committed developments and the proposed development' scenario.

Table 14: Operational Road Traffic Noise Levels for Scenarios A and B, dB $L_{A10,18hour}$

Receptor	Road Traffic Noise Level		Difference
	Scenario A (future baseline without dev.)	Scenario B (future baseline with dev.)	
A3 (South of M25 Junction 10)	86.0	86.0	0.0
Old Lane	65.6	66.6	+1.0

7.14 The maximum increase in noise levels during the operational phase of the Proposed Development at receptors on the A3 and Old Lane adjacent to the SPA is predicted to be 1dB, which is considered to be an indiscernible increase.

7.15 In view of the above, it is concluded that the proposal is not likely to have a significant effect on the Thames Basin Heaths SPA when considered alone, nor adversely affect its integrity.

Impact on SANG

7.16 **Map 14** shows that noise levels throughout the 3.9km circular walk within the northern SANG area will be below 55dB or between 55-60dB during the operational phase. Only small and discrete areas within the SANG adjacent to the A3 corridor will be subject to noise levels above 60dB. However given the local context, where visits to Wisley and Ockham Commons SSSI are made despite its proximity to the noisy A3 and M25 corridors, noise levels within the Proposed SANG are not considered likely to materially detract from its attractiveness, with other factors such as convenience and suitability for dog walking most likely to have a greater influence.

Conclusion

7.17 In view of the above, it is concluded that the proposal is not likely to have a significant effect on the Thames Basin Heaths SPA as a result of noise when considered alone, nor to adversely affect its integrity.

7.18 Furthermore noise during the operational phase is not anticipated to affect the attractiveness and efficacy of the proposed SANGs.

8. SURFACE WATER AND GROUNDWATER

Introduction

8.1 This section considers potential adverse effects of the Proposed Development on habitats within The Thames Basin Heaths SPA as a consequence of potential changes in surface water and groundwater quality and quantity.

8.2 The information summarised below is taken from Chapter 7 – Drainage and Flood Risk of the ES, prepared in support of the planning application by WSP.

Receptor Sensitivity

8.3 Heathland and woodland habitats are sensitive to the effects of pollution through groundwater and surface run-off sources on water quality. These habitats are also sensitive to changes in water quantity which may affect the water table and water levels essential for supporting associated vegetation communities.

Defining the Zone of Influence

8.4 Identification of the potential Zone of Influence with respect to surface water and groundwater was based on an understanding of the surface water and groundwater catchments. In this respect, connectivity between the Application Site and The Thames Basin Heaths SPA was identified, as is discussed in detail below.

Assessment Methodology

8.5 Full methodology regarding the assessment of potential impacts of the Proposed Development on the hydrological and hydrogeological environments is included in ES Chapter 7 'Drainage and Flood Risk' but in summary involved the following:

- Consultation with relevant statutory and non-statutory bodies as part of the Scoping exercise;
- Detailed desk studies and site visits to establish current geological, hydrological and hydrogeological conditions;
- Evaluation of the potential impacts of the development and the effect that these could have on the current site conditions;
- Identification of possible measures to avoid and mitigate against any adverse impacts resulting from the proposed development; and
- Evaluation of the residual significance of these impacts by consideration of the sensitivity of the baseline features on the application site, potential magnitude of these impacts and the probability of these impacts occurring, following mitigation.

Baseline Conditions

Topography

8.6 The Site lies on a plateau at an elevation of approximately 40m above Ordnance Datum (aOD). The majority of the Application Site is relatively flat with a minimal change of elevation which is reflective of its former use as an airfield.

8.7 The Site forms a natural watershed with surface water running off to both the north and south and is therefore divided into two drainage catchments, one draining towards the north-west and the other towards the south-west.

8.8 In the south-west corner, the Application Site falls towards the Stanford Brook, before rising to form the banking of the A3 and associated roundabout and slip road. The Stanford Brook flows from east to west to the south of the Site, converging with the River Wey at the north-west end of Mill Lane (approximately 800m west of the Site).

8.9 Runoff from the north flows into a network of small unnamed drainage ditches flowing from south to north, converging with the River Wey at various locations north of the A3. **Map 15** shows the topography of the Application Site and the waterways contained within he OS Mastermap, which illustrates the drainage catchments described above.

Surface Water

Surface Water Features

8.10 The Site is not located within the vicinity of the coast, nor is the site situated within the vicinity of a Tidal estuary.

8.11 The Site is located within the catchment of the River Wey, which lies approximately 1.2km to the west. The Stanford Brook flows through the south-west part of the Site and is a tributary of the River Wey, flowing into the River Wey at the north-west end of Mill Lane, approximately 800m to the west of the Site. The River Wey and Stanford Brook are classified by the Environment Agency as Main Rivers.

8.12 Stanford Brook flows south-east to north-west and passes beneath the A3 at Ockham Interchange to the west of the Site. The Brook lies within the Thames River Basin District, within the River Wey catchment.

8.13 There are seven current discharge consents to surface water listed within 1km of the Site, details of which can be found in the Chapter 7 of the ES.

8.14 The Environment Agency's Flood Mapping shows that the majority of the Site is within Flood Zone 1, which comprises land thought to have less than a 1 in 1000 probability of river flooding in any given year. A small area of the Site, along with the alignment of the Stanford Brook is located within Flood Zone 2 and 3. Flood Zone 2 comprises land assessed as having

between a 1 in 100 and a 1 in 1000 annual probability of river flooding. Land in Flood Zone 3 is assessed as having a 1 in 100 or greater annual probability of river flooding.

8.15 The Site is located within the Weybridge Catchment Abstraction Management Strategy (CAMS) area. The CAMS indicates that the surface water accounts for approximately 30% of all abstraction in this area and groundwater accounts for approximately two thirds of abstraction in the Wey catchment.

8.16 The Site is located in a portion of the catchment described in the CAMS as 'AP7 Weybridge' which has the local resource status of 'water available for licensing' that is over-ridden by the flow requirements of the River Thames that changes the status to 'water not available for licensing'.

8.17 Without appropriate mitigation measures in place, uncontrolled surface water runoff from the Proposed Development could pose a detrimental impact to the aforementioned surface water features and, indirectly, their groundwater receptors, including the Thames Basin Heaths SPA.

Surface Water Quality

8.18 The River Basin Management Plan (Rivers) for Stanford Brook regards surface water quality as:

- Current Ecological Quality: Moderate;
- Current Chemical Quality: Not Yet Assessed;
- 2015 Predicted Ecological Quality: Moderate;
- 2015 Predicted Chemical Quality: Not Yet Assessed.

8.19 The River Basin Management Plan for River Wey regards surface water quality as:

- Current Ecological Quality: Moderate (downstream poor);
- Current Chemical Quality: Not Yet Assessed;
- 2015 Predicted Ecological Quality: Moderate.

8.20 The Site and locale are not classified as a surface water nitrate vulnerable zone.

Groundwater

Hydrogeological Characteristics

8.21 The British Geological Survey (BGS) Map No. 285 indicates that the Site is underlain by superficial deposits of the Lynch Hill Gravel Member of sand and gravel, locally with lenses of silt, clay or peat; over the bedrock of the Bagshot Formations of pale yellow-brown sand and sparse seams of gravel; and bedrock of the London Clay Formation or poorly laminated blue-grey silty clay with some sand layers.

8.22 The Lynch Hill Gravel Member (superficial geology) is classified by the EA as a Secondary (A) Aquifer. According to the EA aquifer classification system, 'Secondary (A)' aquifers are defined as permeable layers capable of supporting water supplies at a local rather than strategic scale and in some cases, forming an important source of base flow to rivers.

8.23 The Bagshot Formation (bedrock geology) is classified by the EA as a Secondary (A) Aquifer. Where the Bagshot Formation is absent in the south western area of the Site, the bedrock geology comprises the London Clay Formation, classified by the EA as an Unproductive Stratum. Unproductive strata are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Groundwater Levels and Flows

8.24 Groundwater flow in the Lynch Hill Gravel Member/Bagshot Formation is estimated to be northwest, away from the Stanford Brook.

8.25 According to the Environment Agency, the aquifer vulnerability classification for the Application Site is divided into 'Soils of High Leaching Potential (H1) and (H2)'. Soil Classification (H1) are soils defined as 'soils which readily transmit liquid discharges because they are either shallow or susceptible to rapid by-pass flow directly to rock, gravel or groundwater'. Superficial geology comprising the Lynch Hill Gravel Member is likely to fall into this category. Soil Classification (H2) are soils defined as 'deep, permeable, coarse textured soils which readily transmit a wide range of pollutants because of their rapid drainage and low attenuation potential'. Bedrock geology comprising the Bagshot Formation is likely to fall into this category.

Groundwater Quality

8.26 The Site and locale are not classified as either a nitrate vulnerable zone or a source protection zone.

8.27 The River Basin Management Plan (Groundwater) for the area currently regards the site and surround areas groundwater quality as:

- Current Quantitative Quality: Poor;
- Current Chemical Quality: Good;
- 2015 Predicted Quantitative Quality: Poor;
- 2015 Predicted Chemical Quality: Good.

8.28 Chapter 7 of the ES deals with the risks to groundwater from contaminants.

Water Resources

8.29 Based upon the EA's groundwater mapping, the Site is indicated to lie outside of designated Groundwater Source Protection Zones.

8.30 The Site is located within the Weybridge Catchment Abstraction Management Strategy (CAMS) area. The CAMS indicates that the surface water accounts for approximately 30% of all abstraction in this area and groundwater accounts for approximately two thirds of abstraction in the Wey catchment.

8.31 The Site is located in a portion of the catchment described in the CAMS as 'AP7 Weybridge' which has the local resource status of 'water available for licensing' that is over-ridden by the flow requirements of the River Thames that changes the status to 'water not available for licensing.'

Assessment of Likely Significant Effects

8.32 Key aspects of the Proposed Development which would potentially generate unmitigated impacts upon flood risk and the hydrogeological / hydrological regimes with the potential to result in consequent effects on the SPA include:

Construction Phase

- Potential increase in physical contamination entering surface water bodies and drainage features due to increased sediment loading during construction; and
- Potential increase in flood risk during Construction.

Operational Phase

- Potential increase in physical contamination entering surface water bodies and drainage features due to increased sediment loading during Operation; and
- Potential increase in flood risk during Operation.

8.33 A brief outline of the impact assessment is provided below. However, Chapter 7 of the ES should be referred to for further detail.

Construction Phase

Potential Increase in Physical Contamination Entering Surface Water Bodies and Drainage Features due to Increased Sediment Loading during Construction

8.34 Construction activities may lead to the disturbance and mobilisation of physical contaminants (i.e. dust, sediments and muds). Particularly during periods of heavy rainfall, vehicle movements resulting in damage to soil structure may generate increased suspended solids content within surface water run-off. In addition, during periods of dry, windy weather, windblown dusts generated by the excavation of soils and breaking out of existing hard-standing and foundations have the potential to directly reduce the quality of surface water features.

8.35 On-site surface water features in the north of the Application Site discharge to the River Wey. Construction activities, if left unmitigated, could increase sediment loads within the watercourses, resulting in increased turbidity and a reduction in dissolved oxygen.

8.36 During the construction of the Development, contamination from mobilised suspended solids through site runoff and spillage of fuels, oil or cement may lead to contaminated water. This may impact groundwater as well as surface water features.

8.37 Pollutants associated with routine runoff can affect biodiversity by directly affecting water quality through contaminants, or by sediment smothering, feeding and breeding grounds and physically altering a habitat.

8.38 Due to the on-site surface water features and connectivity with catchments encompassing the SPA, the potential for increased physical contamination of surface water and drainage features flowing into the SPA during construction cannot be ruled out in the absence of mitigation.

Potential Increase in Flood Risk during Construction

8.39 Notwithstanding the presence of extensive existing impermeable concrete and hardstanding areas within the Application Site, construction of the Development is likely to lead to the introduction of impervious structures and a reduced permeable area through the temporary siting of the contractor's compound and storage areas which may temporarily increase the amount of surface water runoff. This may lead to flooding across the Application Site, as well as within the surrounding area.

8.40 Overland flow across, into, or out of, the Application Site would currently follow the line of least resistance (natural topography), which is likely to change during construction and this may reduce the quantity of water entering features that drain towards the SPA.

8.41 There is a low risk of fluvial and groundwater flooding at the Application site, and only relatively small areas are assessed as being at 'medium' risk of surface water flooding. Nevertheless potential effects as a result of increased flood risk during construction cannot be ruled out in the absence of mitigation.

Operational Phase

Potential Increase in Physical Contamination Entering Surface Water Bodies and Drainage Features due to Increased Sediment Loading during Operation

8.42 The impermeable area on-site during the operational phase will largely remain unchanged compared to the current conditions. However, the distribution of the impermeable areas across the Application Site is anticipated to change with increased infrastructure (sediment traps within gully drains etc) which should reduce the sediment loading to surface watercourses.

8.43 The potential for sediment entrainment in surface water run-off is anticipated to decrease during operation, due to the nature of the Development which will only involve minimal or localised disturbance of soils, such as within private gardens. Furthermore, a change in land use from agricultural to residential will result in a lower volume of physical contaminants

(sediment) which could potentially be entrained in surface water run-off and discharged to surface water receptors, reducing their physical, chemical and biological quality.

8.44 During the operational phase, the potential for pollutants to enter the groundwater and surface water remains, primarily originating from routine runoff from operational roads in the development.

8.45 Potential contamination infiltrating and entering the surface water drainage system has the potential to impact groundwater and surface water features draining into the SPA and towards the River Wey, either as dissolved or suspended load which has the potential to affect water quality. Measures will therefore be required to ensure that negative effects on water quality are avoided.

Potential Increase in Flood Risk during Operation

8.46 Potential sources of flooding at the Application Site include surface water, fluvial and groundwater.

8.47 Reference should be made to the FRA for detailed information on baseline and flood risk, the potential effects of the proposed development on flood risk and development of the mitigation measures to protect on-site and off-site water receptors, including those within the SPA, from the effects of flood events.

Surface Water Flood Risk

8.48 Land in the northern extent of the Application Site drains via several unnamed drainage ditches which begin on or close to the northern boundary of the Application Site and flow from south to north towards the SPA. These ditches converge with the River Wey at various locations to the north of the A3 and are classified as ordinary watercourses. These watercourses are therefore, the responsibility of the riparian owners, although the Lead Local Flood Authority has a duty over managing flood risk from ordinary watercourses.

8.49 Surface water flooding may occur when extreme rainfall exceeds the capacity of the drainage system; the ground becomes saturated such that further rainfall cannot filtrate. Surface water flooding may be exacerbated by blockage of drainage ditches.

8.50 The proposed surface water drainage strategy is based upon the principle of retaining the unnamed drainage ditches to the north of the site, together with onsite SuDS.

8.51 The construction of developments can create local changes to the catchment drainage pattern. In order to ensure that the Development does not result in an increase in surface water flood risk and altered hydrological flow to offsite receptors, the drainage strategy proposes that surface water flows be controlled and attenuated to ensure that the effect of the Development upon the drainage network is mitigated, such that water levels downstream are unchanged. The surface water drainage strategy seeks to mimic the existing drainage regime at the Application Site, ensuring no change to the hydrological conditions within offsite receptors, including the SPA.

Fluvial Flood Risk

8.52 As all the built areas of the Development will not be situated in the floodplain, the Development will not alter the flood levels and extents of the existing watercourses.

8.53 The surface water drainage strategy for the Development will provide mitigation for increased flows towards the River Wey for the lifetime of the development such that risks of fluvial flood effects on the SPA are avoided.

Groundwater Flood Risk

8.54 The general groundwater flow direction at the Application Site is considered to be towards the River Wey to the northwest, with local variations in proximity to the drainage network in the northern half of the Application Site.

8.55 Groundwater flooding occurs when the water table rises above the level of the ground. Groundwater levels fluctuate spatially and temporarily across the Application Site and surrounding area. Higher groundwater elevations are expected further away from the influence of the network of ditches and groundwater drawdown is anticipated locally adjacent to the drains. Higher groundwater elevations are also anticipated during periods of higher rainfall.

8.56 Notwithstanding this, no records of groundwater flooding on Site have been identified, and risk of groundwater flooding during the operational phase is anticipated to be low. The surface water drainage strategy for the Development will provide mitigation for any prospect of increased flows towards the River Wey for the lifetime of the development such that risks of groundwater flood effects on the SPA are avoided.

Impact Avoidance and Mitigation

Construction Phase

Potential Increase in Physical Contamination Entering Surface Water Bodies and Drainage Features due to Increased Sediment Loading during Construction

8.57 Mitigation during the construction phase will include a variety of good environmental site practices to avoid or minimise effects at the source. Such measures include, but are not limited to, the following:

- Working areas shall be clearly defined to ensure the disturbance of soils is minimised, where possible;
- Haul routes and accesses shall be clearly defined to minimise risk of accidents. Construction vehicles will be regularly maintained to reduce the risk of hydrocarbon contamination associated with leaks and spillages, and will only be active when required;
- The cleaning of vehicles wheels prior to leaving site;

- Controlled and covered waste storage areas;
- Dust suppression (i.e damping down);
- Installation of systems such as silt traps and swales designed to trap silty water including adequate maintenance and monitoring of these to ensure effectiveness, particularly after adverse weather conditions;
- Designated areas for the storage of hazardous materials, fuels and chemicals. All designated areas will be appropriately bunded and all filler points/valves will be located within the extent of bund or appropriate drip trays provided;
- On-site availability of oil spill clean-up equipment including absorbent material and inflatable booms for use in the event of an oil spill/leak;
- Use of drip trays under mobile plant;
- Provision of environmental awareness training for site workers;
- The Drainage Strategy will be implemented on a phase by phase basis as part of the design solution; and
- Use of inert, uncontaminated material during construction

8.58 Best practice recommendations for the prevention of contamination will be outlined in more detail in a Construction Environment Management Plan (CEMP) which will incorporate the Environment Agency Pollution Prevention Guidelines and CIRIA guidance. The CEMP will include an erosion prevention and sediment control plan to reduce the quantity of sediment entrained in runoff and to prevent hydromorphological changes to surface water features.

Potential Increase in Flood Risk during Construction

8.59 Concurrent phasing of site preparation, earthworks and construction and operational works will be required for the Application Site and the potential for construction activities to occur within the site at the same time as other phases become operational have been considered in the assessment of effects. The drainage strategy will be implemented on a phase by phase basis as part of the design solution.

8.60 It is assumed that the following standard mitigation measures will be undertaken at the Application Site during the construction phase to minimise the risk of flooding:

- Deep excavations will not be attempted in wet weather or following periods of sustained wet weather, when groundwater levels have the potential to be high. These works will be undertaken prior to development to confirm groundwater elevations and therefore the potential for ingress of water during excavations. Dewatering measures will be employed if necessary. If dewatering is required, abstraction and discharge licences will be sought from the Environment Agency under the terms of the Water Resource Act 1991;
- Movement of materials around the Application Site will be managed under an appropriate Materials Management Plan to ensure the placement of materials does not change baseline levels of flood risk. Materials will not be stockpiled in the floodplain or in such a way that will increase flood risk off site;

- Workers on-site will be made aware of risks and how to mitigate them during the site preparation, earthworks and construction phase;
- Prior to the commencement of the construction phase, site runoff will be controlled to mitigate both flood risks and sediment loading, ensuring the protection of water quality in receiving waterbodies from increased sediment and contaminant load;
- It is anticipated that surface water runoff from the various construction areas within the Application Site could be managed by the siting of temporary impervious structures on the existing concrete and hardstanding surfaces, and / or the use of temporary bunding and settlement ponds to protect the receiving water environment from excess water, sediment load and contaminants. Settlement ponds allow for isolation and on-site treatment of sediment laden or chemically contaminated surface water runoff prior to discharge, following agreement with the appropriate authority, or use of other appropriate means of disposal; and
- Best practice construction measures will be adopted in line with the Considerate Contractors Scheme and 'Site handbook for the construction of SUDS' (CIRIA C698) to minimise the risk of flooding during construction.

Operational Phase

Potential Increase in Physical Contamination Entering Surface Water Bodies and Drainage Features due to Increased Sediment Loading during Operation

8.61 The drainage strategy is designed in accordance with the SuDS Management Train, as detailed in the CIRIA SuDS Manual (C697). This multi-staged approach will provide protection against the migration of pollutants dissolved and/or suspended in the runoff to groundwater and surface water features. Interceptors will also be installed on the drainage network to provide additional protection against pollutants. The discharge from the Application Site via SuDS will maintain the current level of water quality.

8.62 Pollution control measures will include trapped road and car park gullies and oil interceptors which will attenuate physical contaminants. These facilities will be subject to routine maintenance.

Potential Increase in Flood Risk during Operation

8.63 Infiltration drainage will be used there feasible within the Application Site to assist in the control of water movement to offsite receptors. Surface water runoff will be discharged at the existing Greenfield runoff rate for the Application Site, meaning the rate of water entering the surface water features on-site and off-site will not be increased as a result of the Development, into the onsite drainage ditches which will be retained within the Development, and new attenuation basins will be used to detain additional water.

8.64 Finished site levels will be engineered to provide positive drainage and prevent ponding. Gradients of external areas will be designed such that any overland flow resulting from extreme events will follow the path of least resistance, following natural topography. The

accumulation of standing water will therefore be minimised resulting in the maintenance of the existing hydrological regime.

8.65 The drainage strategy has been undertaken in accordance with the following requirements of the Environment Agency to ensure surface water flood risk is not increased by the development:

- Peak discharge should be contained for a 1 in 30 year storm.
- Peak discharge should be limited to the greenfield run-off rate, or the lowest practicable discharge of 5l/s.

Conclusion

8.66 In conclusion, the drainage strategy for the Proposed Development has been developed to achieve greenfield discharge rates and will incorporate a SuDS management train in accordance with the SuDS Manual. Taking this into account, in addition to the provision of comprehensive pollution control measures, no significant effects on the SPA as a result of surface water or groundwater change, in terms of both water quality and quantity, is considered likely.

9. AIR QUALITY

Introduction

9.1 This section considers the potential negative effects of potential traffic-related air quality impacts on the Thames Basin Heaths SPA associated with the Proposed Development.

9.2 Potential impacts upon the qualifying features and habitats of the Ockham and Wisley Commons SSSI are discussed in this section only insofar as those effects may directly or indirectly then impact upon the qualifying features of the Thames Basin Heaths SPA, and therefore fall to be considered under Regulation 61 *et seq* of the Habitats Regulations. Potential impacts on the SSSI features that do not have any bearing on the integrity of the SPA are covered separately, in a separate submission.

9.3 Further to the above, to avoid unnecessary duplication, this section only considers those specific air-quality related potential impacts on the SPA that have not already been screened out as unlikely to be significant as part of work that was undertaken to inform the ES. This assessment should therefore be read in conjunction with the information already presented in:

- ES Chapter 6 – Air Quality; and
- ES Chapter 8 - Ecology.

9.4 In relation to potential impacts upon the SPA from dust generation during the construction phase of the proposed development, Chapter 6 of the ES (Air Quality), concluded that, subject to the mitigation measures outlined in Section 6.5, potential impacts would be negligible (i.e. not likely to be significant either alone or in combination with other plans and projects). For completeness, information regarding the number of HGV movements both within the site and offsite during construction is provided in **Appendix 6**. The measures outlined in Section 6.5 of ES Chapter 6, which detail best practice measures in the control of dust emission, will be incorporated into a detailed Construction Environmental Management Plan (CEMP) to be delivered at the detailed design stage, and which can be subject to planning condition. Impacts from dust generation are not therefore considered further in this HRA report.

Assessment Context

Relevant Supplementary Legislation, Policy and Guidance

9.5 Legislation, policy and guidance pertaining to the HRA process and to the assessment of air quality impacts upon habitats are set out more fully in **Section 1** and ES Chapters 6 and 8 respectively. Notwithstanding the above, the documents below are of particular relevance to this assessment, and so have been briefly summarised.

European CAFE Directive (2008/50/EC) and Air Quality Standards Regulations 2010

9.6 The Directive details air quality limit values, target values, and critical levels for a number of air pollutants established by the European Parliament and Council for the protection of human health, vegetation and ecosystems. These have been transposed into UK legislation by the 2010 Regulations. Of particular relevance for the current assessment is the pollutant oxides of nitrogen (NO_x) which has a Critical Level of 30µg/m^3 (measured as an annual mean) and which is discussed further below.

United Nations Economic Commission for Europe Critical Loads

9.7 The United Nations Economic Commission for Europe (UNECE) has set Critical Loads for N-Deposition for specific sensitive ecosystems (UNECE, 2003). Critical Loads are defined by the UNECE as 'a quantitative estimate of an exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge'[1]

The Environment Agency's Horizontal Guidance Note H1 Annex F (Issue 2.2, December 2011)

9.8 This guidance provides critical levels for the protection of vegetation and ecosystems, including those relevant to SPAs. Further the document also advises that 'insignificant' Process Contributions (PCs) (contributions that a proposal will make towards air pollution) should be screened out from further consideration.

9.9 Insofar as it is relevant to the proposals and to HRA, this guidance advises that PCs can be considered 'insignificant' if the long-term PC is <1% of the long term environmental standard (the Critical Load or Level for the sensitive habitats concerned). This is on the basis that the Environment Agency advises that it is unlikely that an emission at this level will make a significant contribution to air quality, since PCs will be small in comparison to background levels, even if a standard is exceeded, and that the 1% threshold is two order of magnitude below the applicable environmental standard, and provides a substantial safety margin.

9.10 The above-described process of screening out insignificant PCs associated with the proposal has already taken place, and is summarised in Chapters 6 and 8 of the ES. This HRA report therefore concentrates on examining further those PCs to air pollution generated by traffic associated with the proposals, which could not previously be screened out as being 'insignificant' on the above basis. The EA Guidance Note suggests that detailed air modelling may be required in such circumstances, and this exercise has been carried out to inform the HRA.

The Thames Basin Heaths SPA

9.11 As explained in **Section 3**, The Thames Basin Heaths SPA is designated for the presence of three species of bird listed on Annex 1 of the Birds Directive that nest either on or close to the ground. Direct effects on the birds themselves from air pollution are highly unlikely.

[1] http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm

but indirect effects are possible if air pollution effects habitats to such an extent that their ability to continue to support Annex 1 birds becomes compromised.

9.12 As set out in ES Chapter 8, the following habitats present on the SPA are important for supporting populations of Annex 1 birds:

- Coniferous Woodland; and
- Dry Heath

9.13 The screening exercise detailed in ES Chapters 6 and 8 has already shown that all potential air quality impacts upon the Thames Basin Heaths SPA during the construction phase can be screened out as being unlikely to be significant. This is not therefore considered further in this HRA Report.

9.14 To assess whether air quality impacts on the SPA were likely as a result of traffic generated during the operational phase, the Predicted Environmental Concentration (PEC) of pollutants on the SPA was modelled in 2031, assuming that the required mitigation to reduce and control traffic had been implemented. This modelling scenario was referred to as 'Scenario C'.

9.15 Instances where potential impacts on the abovementioned habitats during the operational phase (Scenario C) could not be screened out as part of the ES work, and are to be considered further as part of the HRA, therefore, are:

- Five occasions where the PEC for predicted Nitrogen deposition on coniferous woodland exceeded the Upper Critical Load, and where the PC also exceeded 1% of the Lower Critical Load (but never the Upper Critical Load); and
- Several occasions where the predicted NOx concentrations exceed the Critical Level, and where the PC also exceeds 1% of the Critical Level.

9.16 The relevant Critical Loads and Levels for different habitat types and pollutants considered within this HRA Report have been taken from the Air Pollution Information System (APIS) website, and from the Environment Agency's Horizontal Guidance Note H1 – Annex (f), and are set out below in **Table 15**.

9.17 The Air Quality modelling that was undertaken to inform the ES modelled pollutant concentrations and depositions along discrete modelled transects, so further modelling has been undertaken to inform this HRA report, to identify the actual areas that are likely to be affected by the predicted exceedances, so that potential effects on the habitats within these areas can be considered further.

Table 15: Relevant Critical Loads and Levels Considered in this HRA Report.

Broad Habitat	Critical Load Range for Nitrogen Deposition (kg N/ha/yr)	NOx Critical Level (µg/m³)
Coniferous Woodland	5-15	30
Dry Heath	10-20 (**N/A** however – Air Quality Modelling undertaken for the ES has confirmed that there are no predicted exceedances to which the project PC contributes more than 1% of the Lower Critical Load)	

9.18 **Table 16** below sets out information taken from APIS, that describes the potential sensitivity of Annex 1 bird habitats to the air pollutants addressed in the HRA report.

Table 16: Potential Sensitivity of Annex 1 Bird Habitats to Pollutants.

Annex 1 Species	Habitat	Sensitivity to NOx	Sensitivity to Nitrogen Deposition
Woodlark	Coniferous Woodland	Information on APIS states that this species can be vulnerable to impacts as a result of effects of NOx on this habitat type	Information from APIS states that Woodlark can be sensitive to Nitrogen impacts on this broad habitat type, as it may breed in certain plantation stages. Nitrogen deposition on coniferous woodland habitats can cause changes in soil processes, nutrient imbalance, altered composition of mycorrhiza and ground vegetation
	Dwarf Shrub Heath	Information on APIS states that this species can be vulnerable to impacts as a result of effects of NOx on this habitat type	N/A – PC to exceedance does not exceed 1% of CL

Annex 1 Species	Habitat	Sensitivity to NOx	Sensitivity to Nitrogen Deposition
Nightjar	Coniferous Woodland	Information on APIS states that this species is not vulnerable to impacts as a result of effects of NOx on this habitat type.	Information from APIS states that Nightjar is not sensitive to Nitrogen impacts as a result of the effects of nutrient nitrogen deposition on this broad habitat type
	Dwarf Shrub Heath	Information on APIS states that this species can be vulnerable to impacts as a result of effects of NOx on this habitat type	N/A – PC to exceedance does not exceed 1% of CL
Dartford Warbler	Coniferous Woodland	This species is usually resident in dwarf shrub heath habitats - APIS consequently considers that Dartford Warbler are only potentially vulnerable to air quality Impacts upon Dry Heath (not coniferous woodland)	
	Dwarf Shrub Heath	Information on APIS states that this species can be vulnerable to impacts as a result of effects of NOx on this habitat type	N/A – PC to exceedance does not exceed 1% of CL

9.19 In view of the above information in **Table 16** taken from APIS, this HRA report focusses on potential air quality impacts upon Coniferous Woodland habitats from Nitrogen Deposition and NOx concentrations, and in particular upon the potential for Woodlark to be affected, as the other two Annex 1 bird species are not considered by APIS to be vulnerable to the specific potential effects that have been identified (NOx concentrations and N deposition).

Assessment Methodology

9.20 To enhance the resolution of the assessment work that was carried out for the Environmental Assessment, the following additional work was carried out to further inform the assessment of potentially significant effects:

- **More detailed Air Quality modelling**, to predict and map those specific areas in which the PEC for pollutants under Scenario 2 is predicted to be in exceedance, and where the PC from the project is predicted to be over 1% of the applicable Critical Load or Level; and

- **A vegetation survey** of those habitats that are actually present in the areas identified by the above enhanced modelling work

9.21 The methodologies used for this additional survey and assessment work is set out below.

Detailed Air Quality Modelling Methodology

9.22 The same advanced air quality dispersion model (ADMS Roads) model set-ups undertaken for the air quality assessment presented in the ES chapter were used as the basis for providing a higher resolution of information for the HRA. The model set-ups for Scenarios A, B and C, were amended to produce gridded model outputs (as opposed to predicting pollutant levels at discrete receptor locations) across an areas of area of 3.0km x 2.1km, which encompassed the designated ecological sites. The gridded output was produced using the highest number of points (100 receptors in the X and Y planes) available in ADMS Roads). This enabled detailed contour plots for the pollutants to be produced, which in turn provided a graphical means of demonstrating the likely spatial variation of pollutant levels across the sites. The data processing undertaken to derive the plots and figures was consistent with that undertaken for the assessment for the ES chapter.

Vegetation Survey and Assessment Methodology

9.23 In order to examine potential ecological impacts, the areas identified by the above-described enhanced air quality modelling were projected over a recent aerial photograph of Ockham and Wisley Commons and the vegetation shown within those areas was surveyed and mapped. The fieldwork was carried out by Andrew Cross of EPR on 15, 20 and 21 January 2015. The vegetation present was recorded with reference to the National Vegetation Classification system (NVC; Rodwell et al., 1991-2000).

9.24 Vegetation types were drawn as polygons on a good quality aerial photograph, and the predominant vegetation type in each polygon was used to label the polygon; though the nature of vegetation on heathlands is that it often occurs in mosaics (i.e. one or more types intermingled).

9.25 These NVC types were used to produce a vegetation map. A Landscape Habitats dataset/layer was then produced by grouping related NVC types, for example dry woodlands and scrub, under broader categories in order to display the main habitats in the modelled AQ areas.

9.26 Vegetation that might provide habitat or supporting habitat for Annex 1 birds or SSSI qualifying features were noted, and signs of habitat condition or of potential relevance to air quality such as indications of eutrophic conditions or any extant management regimes were recorded.

Constraints

9.27 It should be noted that the vegetation survey work described above was undertaken in a sub-optimal season, at a time of year when many plant species would not have been visible

or would have been difficult to detect. However, in this case the purpose of the survey work was to identify and map broad habitat types so that the effects of air pollution on these habitat types could be assessed with reference to published research, not to compile a comprehensive list of species. It is considered that sufficient information was gathered for this purpose.

Assessment of Likely Significant Effects

Nitrogen Deposition on Coniferous Woodland

9.28 The main impact of concern for habitats that results from elevated ambient levels of Nitrogen compounds (NOx) is the eutrophication (enrichment) of habitats through Nitrogen deposition.

9.29 Screening work undertaken to inform the ES has already concluded that the PC to Nitrogen Deposition on Dry Heathland in Scenarios C is never predicted to be more than 1% of the lower end of the Critical Load range, and therefore are unlikely to be significantly affected. The assessment has therefore focused on Nitrogen deposition on coniferous woodland.

9.30 The modelling undertaken for the ES showed that the predicted PC from the proposals to N deposition on Coniferous Woodland never exceeded 2% of the lower end of the Critical Load Range, and is therefore only marginally above the threshold at which they would be screened out in any case.

9.31 To investigate this further, the areas in which the project contributes >1% of the lower end of the Critical Load range to an exceedance were mapped over the Landscape Habitat Map produced from field survey. This exercise has shown that these areas are largely confined to within a few metres of the road verge, and they are shown on **Map 16.**

9.32 The habitats recorded within the mapped exceedance areas on **Map 16** contain almost nothing that would provide suitable habitat for the abovementioned Annex 1 birds when taken in context (including Woodlark). The broad vegetation types identified within the subject areas are:

- Bracken;
- Dry Woodland and Scrub (variously comprised of: Road/bank verge scrub, Bracken / Bramble Scrub, Bracken, Bramble and Gorse Scrub, Bracken Woodland, Bramble Woodland);
- A small area of wet woodland (Alder Wood and Willow Scrub); and
- Wetland (comprised of Oligotrophic water and Reed bed).

9.33 The only habitat category from the above which is comparable with the category 'coniferous woodland' is 'dry woodland and scrub'. However, whilst these areas did include Scot's Pine, all were mixed and no significant areas (polygons) were predominantly coniferous.

9.34 Further to the above, it was noted during the survey that these woodland areas adjacent to the M25 and A3 were located on apparently nutrient-rich soil, meaning that most areas had a prolific cover of either Bracken or Bramble, with more open areas being covered in scrub predominantly comprised of the same species, or of Gorse. As these habitats are not therefore dependent upon nutrient poor conditions prevailing, it is very unlikely that there would be any material change in their composition resulting from the anticipated increase in Nitrogen deposition.

9.35 Further to the above, a review of related scientific literature undertaken on behalf of English Nature in 2004 (Now Natural England), concluded that there is some evidence to suggest that wooded shelterbelts act as a physical barrier to Nitrogen transport from sources of diffuse pollution. The woodland areas shown within the potentially affected areas on **Map 16** are probably functioning in this way, preventing Nitrogen compounds from travelling significant distances into the SPA, meaning that the modelled PC contribution towards the exceedance may be exaggerated.

9.36 Notwithstanding the above, the locations of known Annex 1 bird territories (including Woodlark) are shown on **Map 16** in relation to the exceedance areas. It can clearly be seen that these territories are located some considerable distance further into the SPA than the areas to which the project is contributing towards an exceedance. This is probably in part a result of the habitats closer to the road not being suitable for them, and partly due to existing levels of road noise and disturbance from the A3 and M25, meaning that Annex 1 birds are also unlikely to use these areas in the future. Given this, air quality effects in the mapped areas will have no relevance to habitats used (or likely to be used) by Annex 1 birds.

9.37 In view of the above, it is concluded that potential impacts from Nitrogen deposition can be Screened out as being unlikely to contribute towards a significant effect on the SPA, as a result of a combination of the following:

- The area in which the PC from the proposals is predicted to contribute more than 1% of the Critical Level is very small, restricted to within just a few metres of the road verges along the A3 and M25;
- In reality, the existing areas of woodland are likely to be exerting some degree of 'shelterbelt' effect, meaning the areas in which the air quality modelling predicts the PC to exceed 1% of the Critical Level are likely to be exaggerated;
- Within the mapped exceedance areas, habitats (including woodlands) are neither predominantly coniferous, nor are they suitable for Annex 1 bird species (including Woodlark);
- Woodland areas in the mapped locations appear to support a nutrient rich soil, meaning that they are unlikely to be Nitrogen limited and therefore susceptible to change driven by the limited additional modelled PC to Nitrogen deposition; and
- Records of known territories are all located some considerable distance further into the SPA.

NOx Concentrations

9.38 The principal impact upon ecosystems that can be caused by elevated airborne concentrations of NOx is the deposition of these Nitrogen compounds, leading to eutrophication of habitats and impacts upon N-limited habitats. However, for the reasons set out above this potential impact has already been screened out as unlikely to be significant.

9.39 This means that the potential impacts remaining to be considered are the direct phytotoxic effects of Nitrogen compounds on plant species through foliar uptake.

9.40 The Critical Level set for ambient NOx for the protection of vegetation and ecosystems is 30µg/m^3, taken from the European CAFE Directive and the resultant Air Quality Standards Regulations (2010) mentioned above.

9.41 This Critical Level originates from Air Quality Guidelines for Europe compiled by the World Health Organisation (WHO, 2000), and is based upon a review of literature relating to observed effects of Nitrogen pollutants on plants (mainly but not exclusively crop species) in a range of experiments conducted mainly *in vitro*, and often carried out to levels of significantly greater pollution than the Critical Level. Many of the observed physiological effects on plants in these experiments, are difficult to interpret in terms of their effects on habitats, and vary between species; ranging from interference with the operation of stomata, to changes in drought and stress tolerance of some species. The chosen Critical Level was thus set at a level that means that a majority of plant species are protected.

9.42 As NOx Critical Levels are already in exceedance across numerous modelled locations even without development (referred to as modelling Scenario A in the ES- without development, **Map 17**). To assist in the assessment for the HRA Report therefore, the areas in which the PC from the proposals is predicted to contribute to an area of exceedance by at least 1% of the Critical Level in Scenario C were mapped, and superimposed as red-coloured hatching upon the botanical survey data.

9.43 **Map 18** shows these areas superimposed upon the Broad/Landscape habitat types, **Map 19** shows these broad habitats subdivided into types of 'dry' habitat, and **Map 20** shows these broad habitats subdivided into types of 'wet' habitat.

9.44 The Air Quality modelling carried out for the ES showed that the PC contributed a maximum of 9.8% of the Critical Level at locations closest to the roadside, with levels declining to less than 1% at the extent of the mapped areas shown on **Maps 18** to **20** (refer to Appendix 6.10 of the ES for the raw data).

9.45 It is worth noting that, as a result of the proposed highways mitigation measures, in addition to the abovementioned areas of exceedance to which the proposals will contribute, there is a significant area of the SPA that will experience improvements in Air Quality by at least 1% of the Critical Load, as a result of reductions in traffic movements along Old Lane (**Map 18** to **20**).

9.46 It is important to note that whilst these NOx improvement areas are not in their entirety predicted to be in exceedance in the 2031 future baseline (Scenario A, further clarification regarding improvement areas is provided in **Table 17**), they are nonetheless currently experiencing levels of NOx at just below the Critical Level (EcoR_15, Figure 6.3 of ES TA 6.11 = 18.4 µg/m^3) 2031 baseline (Scenario A)), and following the implementation of traffic mitigation measures this will drop by 2.2 µg/m^3 representing a 7.3% reduction in the context of the Critical Level (and notably more than a 1% improvement in relation to the Critical Level)). The Critical Level for NOx (30µg/m^3) is set as the same for all vegetation as a Europe-wide objective and is not adjusted for different habitats. Dose-response relationships between pollutants and vegetation have been shown in research to often see greater changes at lower level increases than higher ones. This means that the potential benefits of a significant decrease in NOx right through the core area of the SPA should not therefore be discounted, despite the fact that these areas are presently below the applicable Critical Level.

9.47 The areas of the various habitats that are predicted to experience a decline or improvement in air quality of at least 1% of the Critical Level are summarised in **Table 17** below.

Table 17: Habitats Predicted to Experience a Decline or Improvement in Air Quality (as a result of NOx Concentration) of at Least 1% of the Critical Level.

Landscape/Broad Habitat	Area of Landscape / Broad Habitat (ha)		
	Decline in AQ	Improvement in AQ (Extent of Areas in Exceedence of the CL under Scenario A)	Improvement in AQ (Total Extent)
Dry Habitats			
Dry Woodland and Scrub*	14.90	0.3	5.14
Bracken	1.70		
Heaths*	0.56		
Acid Grassland	0.15		
M25/A3 Verge Habitat	2.94		
Wet Habitats			
Wet Woodland	0.28		0.37
Wetland	1.07		0.54
Other			
Car Park			0.20

Tracks (Grassy/Sandy)	0.12		
Spoil Heap	0.08		
Tracks (Concrete / Surfaced)	0.22		

*Habitat categories in which Annex 1 bird habitats would be included are **emboldened**.

9.48 As can be seen from **Table 17** above, the majority of habitats that fall within the predicted area of air quality decline are not of a type that could provide habitats for Annex 1 birds.

9.49 Those habitat categories which could potentially include habitats for Annex 1 birds (Dry Heaths and Coniferous Woodland) are shown emboldened in **Table 17.**

9.50 Of these, as already mentioned above, the Dry Woodland category is comprised of a variety of habitat subcategories, but predominantly include non-native coniferous woodland and broadleaved woodland, all of which have a closed canopy and are over dense tall Bracken that is locally invaded by Bramble. Overall, taking into account the areas of decline and improvement, there is a net area of about 9.76ha of Dry Woodland predicted to experience a decline in air quality due to NOx concentrations (NB: Whilst this area is predicted to experience elevated NOx concentrations in the modelled year of 2031, this does not necessarily equate to a perceptible effect on vegetation).

9.51 In addition to the above, whilst modelled areas where the PC is anticipated to be in excess of 1% of the Critical Load for NOx concentration extend further into the SPA than they do for N deposition (explained above) these areas are still a considerable distance away from any known recorded Annex 1 bird territories (shown on **Maps 18** to **20**).

9.52 Further, as with N deposition, research carried out on behalf of English Nature (2004) indicates that trees are likely to exert some 'shelterbelt' effect in blocking the transport of Nitrogen pollution from roads and preventing it from penetrating as far as it otherwise would into sites adjacent to roads. It is likely that the existing woodland along the M25 and A3 is reducing the concentrations of NOx reaching habitats further into the SPA to some degree, so the modelled PC is likely to be exaggerated.

9.53 As with the above discussed in relation to N deposition, the woodland habitats within those areas affected by increases in NOx concentration from the proposal do not represent particularly suitable habitat for Annex 1 birds that seek access to open ground, and as discussed, these areas are unlikely to be used by Annex 1 birds in the future, in part due to the unsuitability of the habitats themselves, and in part due to the existing level of disturbance and noise from the M25 an A3.

9.54 There is one small area of heathland within the modelled area of air quality decline due to NOx, located along the southern edge of the M25. This area appears to have been created by the clearance of woodland and/or scrub, and the subsequent management of this area to encourage heathland vegetation (most likely a deliberate management action taken by the

Surrey Wildlife Trust). The creation of the heathland has apparently required significant scraping and removal of topsoil, which appears to be an attempt to remove Bracken rhizomes from the soil (which would otherwise smother and displace heathland vegetation).

9.55 The fact that this area of created heathland has developed successfully on a cleared area so close to the M25, despite the existing exceedances of the Critical Level for NOx shown under modelled scenario 1, is further indication that the habitats in the identified areas of the SPA are unlikely to be affected in any way that might have implications for Annex 1 birds.

9.56 Evidence from nearby Chobham Common (Surrey Wildlife Trust, 2010), which is another component part of the Thames Basin Heaths SPA, shows that NVC H3 type heathland has been successfully restored through appropriate management in areas adjacent to the M3 (which is similarly subject to existing high levels of traffic-related Nitrogen pollution). This indicates both that significant impacts are unlikely, but also that management measures are available that can be used to address and overcome the effects of Nitrogen pollution. This is discussed further below under impact avoidance and mitigation.

9.57 In summary therefore, it is considered unlikely that the proposals predicted PC to NOx exceedances will have a likely significant effect on the Annex 1 Birds of the SPA or their habitats, either alone or in combination with other plans and projects, for the following reasons:

- Only a limited area of broad habitats that could support habitats suitable for Annex 1 birds exists within the affected exceedance area, and this area is partially offset by other areas of similar habitat that will experience an air quality improvement as a result of declining NOx levels due to traffic mitigation;

- Of the area of broad habitat in the affected area that is of a type that might include habitats suitable for Annex 1 birds, none is particularly suitable for them, and the woodland areas are likely to be benefiting to some degree form a 'shelterbelt' type effect from those trees located nearest the A3 and M25; and

- Evidence from nearby Chobham Common (Surrey Wildlife Trust, 2010), which is another component part of the Thames Basin Heaths SPA, shows that NVC H3 type heathland has been successfully restored through appropriate management in areas adjacent to the M3 (which is similarly subject to existing high levels of traffic-related Nitrogen pollution), and Natural England has indicated that this habitat is being used by Dartford Warbler (personal comment, Graham Steven, NE SSSI Officer), indicating that should broad habitats within the areas of exceedance ever be restored to habitat that is suitable for supporting Annex 1 birds, that air quality exceedances would be unlikely to preclude use of that habitat by Annex 1 birds.

Impact Avoidance and Mitigation

9.58 As no likely significant effects on the Thames Basin Heaths SPA are predicted as a result of proposals PC to Nitrogen deposition or NOx concentrations, acting either alone or in

combination with other plans and projects, no impact avoidance or mitigation measures are required.

9.59 Notwithstanding the above, measures have been recommended in the separate submission addressing potential effects on SSSI habitats to ensure that these are not negatively affected by air quality effects associated with the proposals.

9.60 These measures are unlikely to deliver any benefit for the Annex 1 birds of the SPA, as the evidence shows that they are presently precluded from occupying habitats close to both the A3 and M25. However, they are likely to be able to deliver benefits for the SPA/SSSI habitat complex as a whole, and increase the area of habitat that would be suitable for Annex 1 birds if the M25/A3 were not precluding them. This means that if conditions ever change in the future (e.g. due to major technological improvements to vehicles), these habitats might then become available for Annex 1 birds.

9.61 Furthermore, the suggested measures may be able to deliver a net benefit to the overall integrity of the SPA/SSSI and its habitat complex which, whilst not required under the Habitats Regulations, would nonetheless strongly support the aspirations of the National Planning Policy Framework (NPPF) for planning proposals to deliver net gains for biodiversity.

9.62 In summary, the following recommended measures (set out in full in the separate submission on SSSI habitats) are:

- Monitoring of vegetation in the affected exceedance areas shown on **Maps 18** to **20** through NVC surveys carried out during the summer months in the years 2031 (i.e. at completion) and 2036 (5 years after completion); this would form an additional part to the onsite monitoring role for the Wisley and Ockham Warden proposed and secured as part of the package of SAMM Plus measures (described in **Section 5**); and

- A contribution towards ongoing management of the SSSI for the purposes of mitigating any future negative impacts arising from the operation of the development and identified through the monitoring process. Such mitigation might include the management of scrub, trees and bracken or other measures that would contribute towards maintaining or achieving favourable SSSI condition. Appropriate funding will be provided and secured alongside the package of SAMM Plus measures (described in **Section 5**)

Conclusion

9.63 In view of the above, it is concluded that the proposal is not likely to have a significant effect on the Thames Basin Heaths SPA when considered alone, nor adversely affect its integrity, as a result of air quality change.

9.64 Furthermore, as the Air Quality modelling for Scenario C has taken into account likely levels of traffic and resultant air pollution in 2031, including background pollution from a range of

other emission sources (Please refer to ES chapter 6 – Air Quality), it can be concluded that the proposal is not likely to have a significant effect on the Thames Basin Heaths SPA in combination with other plans and projects, nor to adversely affect its integrity.

9.65 Notwithstanding the above, it should be noted that the above conclusions are predicated upon the implementation of the highways improvements (mitigation) that have been factored into the modelled Air Quality Scenario C, upon which this assessment is based. Should these measures therefore be altered or dropped, this assessment should be revisited to consider whether its conclusions still hold.

10. RESIDUAL EFFECTS

Summary

10.1 Consideration has been given to potential effects from increased recreational pressure, cat predation, surface water and groundwater change, and increases in noise and air pollution as a result of increased traffic movements along the A3.

10.2 Impact avoidance and mitigation measures are proposed where the potential for negative effects have been identified. These comprise the provision of Suitable Alternative Natural Greenspace (SANG) and a package of Strategic Access Management and Monitoring (SAMM) measures to address the potential for effects on the SPA as a result of increased recreational pressure. A comprehensive drainage strategy is also proposed for the Site in addition to pollution control measures, to ensure no effects from hydrological change. In summary, no significant residual effects that would conflict with the conservation objectives for the SPA are predicted to remain following implementation of these measures.

10.3 Although not triggered as a requirement by this assessment, since the nature of air quality exceedance predicted during the operational phase is not anticipated to result in negative effects on the Annex 1 birds, vegetation monitoring of SSSI habitats within areas of air quality exceedance is proposed and a contribution towards SSSI habitat management will be made available to address any future negative air quality effects arising from the operation of the development on the SSSI. Proposed measures to address potential air quality effects on SSSI habitats (addressed in a separate submission) are likely be able to deliver a net benefit to the overall integrity of the SPA/SSSI and its habitat complex which, whilst not required under the Habitats Regulations, would nonetheless strongly support the aspirations of the National Planning Policy Framework (NPPF) for planning proposals to deliver net gains for biodiversity.

Conclusions in Respect of the Habitats Regulations

10.4 In view of the conclusion above, and in light of the Waddenzee Judgment (refer to **Section 1**) no significant effects on the Thames Basin Heaths SPA as a result of the Wisley Airfield development are considered to be likely, either alone or in combination with other plans and projects.

10.5 Therefore in accordance with the Habitats Directive, the Conservation of Habitats and Species Regulations 2010 (as amended) and the ruling of Sullivan J in the Dilly Lane High Court case, it is concluded that GBC do not need to undertake an Appropriate Assessment.

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MAP 1 Site Location

KEY

- Site boundary
- 2km linear distance from site boundary
- 5km linear distance from site boundary
- Special Protection Area (SPA)

SCALE: 1:45,000 at A3

0 500 1,000 1,500 2,000 Metres

N

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PROJECT: Wisley Airfield

DATE: July 2015

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MAP 2 Proposed Site Areas

KEY

- Site boundary
- Built development
- SANG
- Green Infrastructure
- Gypsy and traveller site
- SANG Link

SCALE: 1:9,000 at A3

0 100 200 300 400 Metres

N

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MAP 3 SSSI Condition and Annex 1 Bird Territories

KEY

- Site boundary
- SANG boundary
- Wisley & Ockham Commons SSSI
- SSSI unit in Favourable Condition (with unit ID)
- SSSI unit in Unfavourable Condition (with unit ID)
- Nightjar 2014 record
- Woodlark 2014 record
- Nightjar 2010-2013 record
- Woodlark 2010-2013 record

SCALE: 1:11,000 at A3

0 100 200 300 400 Metres

N

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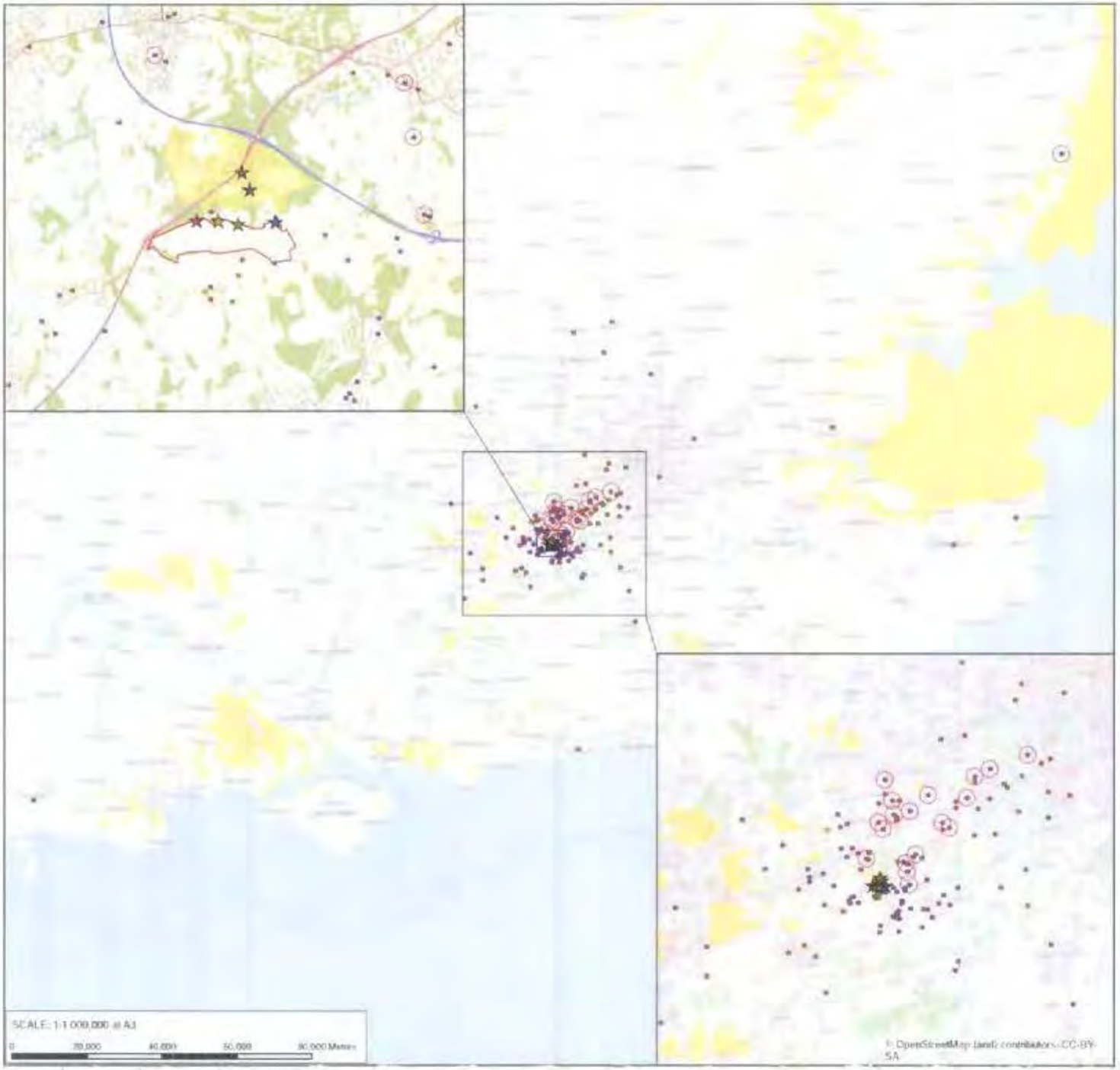

MAP 4 Visitor Survey Results, 2014

KEY

- Site boundary
- Special Protection Area (SPA)
- Access point 1 - Wisley Airfield
- Access point 2 - Wisley Airfield
- Access point 3 - Wisley Airfield
- Access point 4 - Wisley Airfield
- Access point 5 - Pond car park
- Access point 6 - Boldermere car park
- Visitor to access point 1
- Visitor to access point 2
- Visitor to access point 3
- Visitor to access point 4
- Visitor to access point 5
- Visitor to access point 6
- Visitors to access point 5 that are likely to be captured by Wisley SANG

N.B. locations of visitor origins based on postcodes provided during Ecology Soultions visitor survey - as referenced using Royal Mail postcode dataset

N

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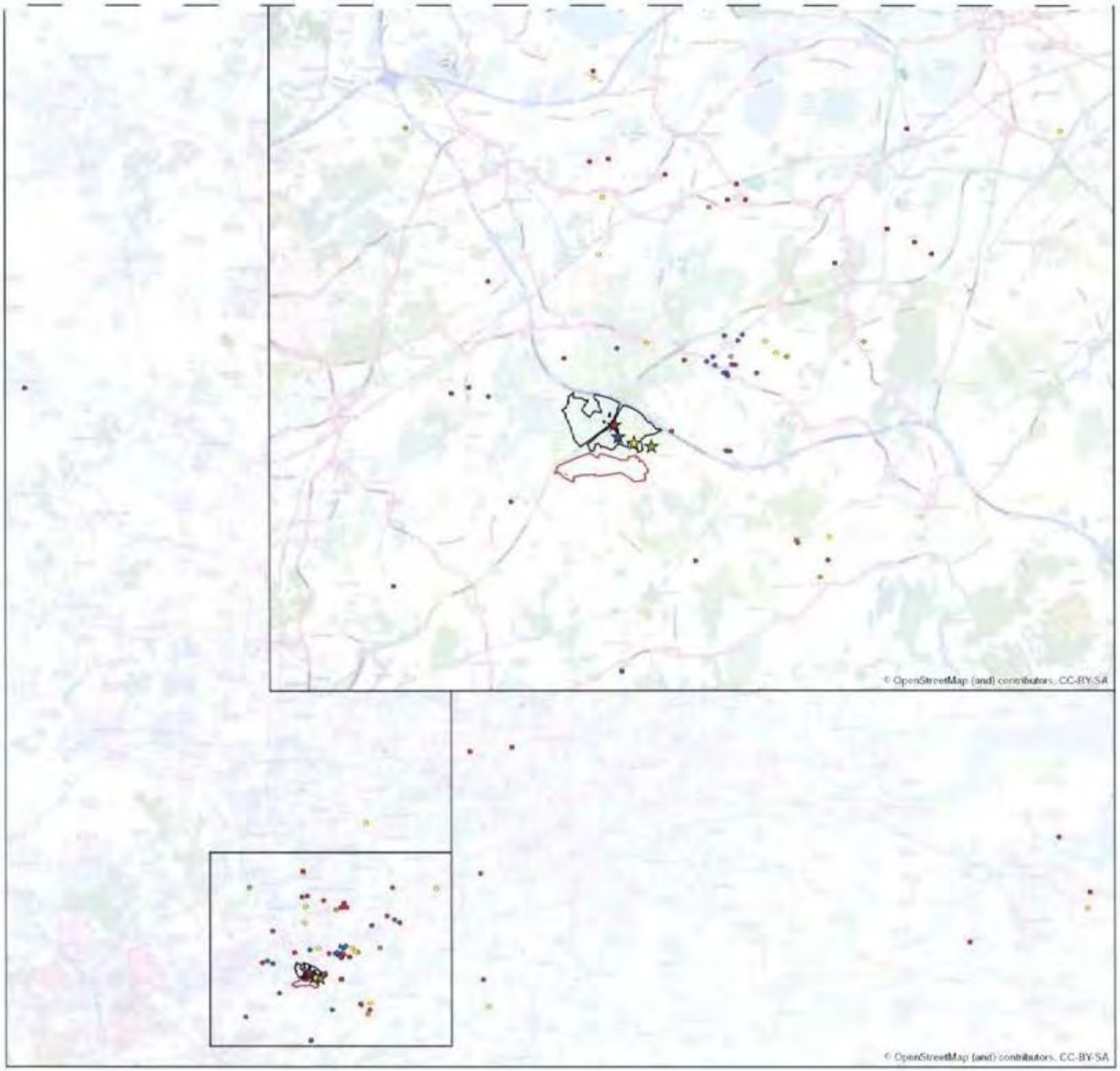

MAP 5 Visitor Survey Results, 2015

KEY

- Site boundary
- Special Protection Area (SPA)
- AP1 - Boldermere car park
- AP2 - Pond car park
- AP3 - Hatchford End
- AP4 - Hatchford Wood
- Visitor to AP1
- Visitor to AP2
- Visitor to AP3
- Visitor to AP4

N.B. locations of visitor origins based on postcodes provided during visitor survey - as referenced using Royal Mail postcode dataset

TOP FRAME SCALE: 1:100,000 at A3

0 1,000 2,000 3,000 4,000 Metres

N

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MAP 6 Visitor Routes and Recreational Pressure

KEY

Routes walked

Density of recreational pressure (m/m2)

- Low
- Medium-Low
- Medium
- High
- Very high
- Access point 1
- Access point 2
- Access point 3
- Access point 4

SCALE: 1:5,000 at A3

0 100 200 300 Metres

N

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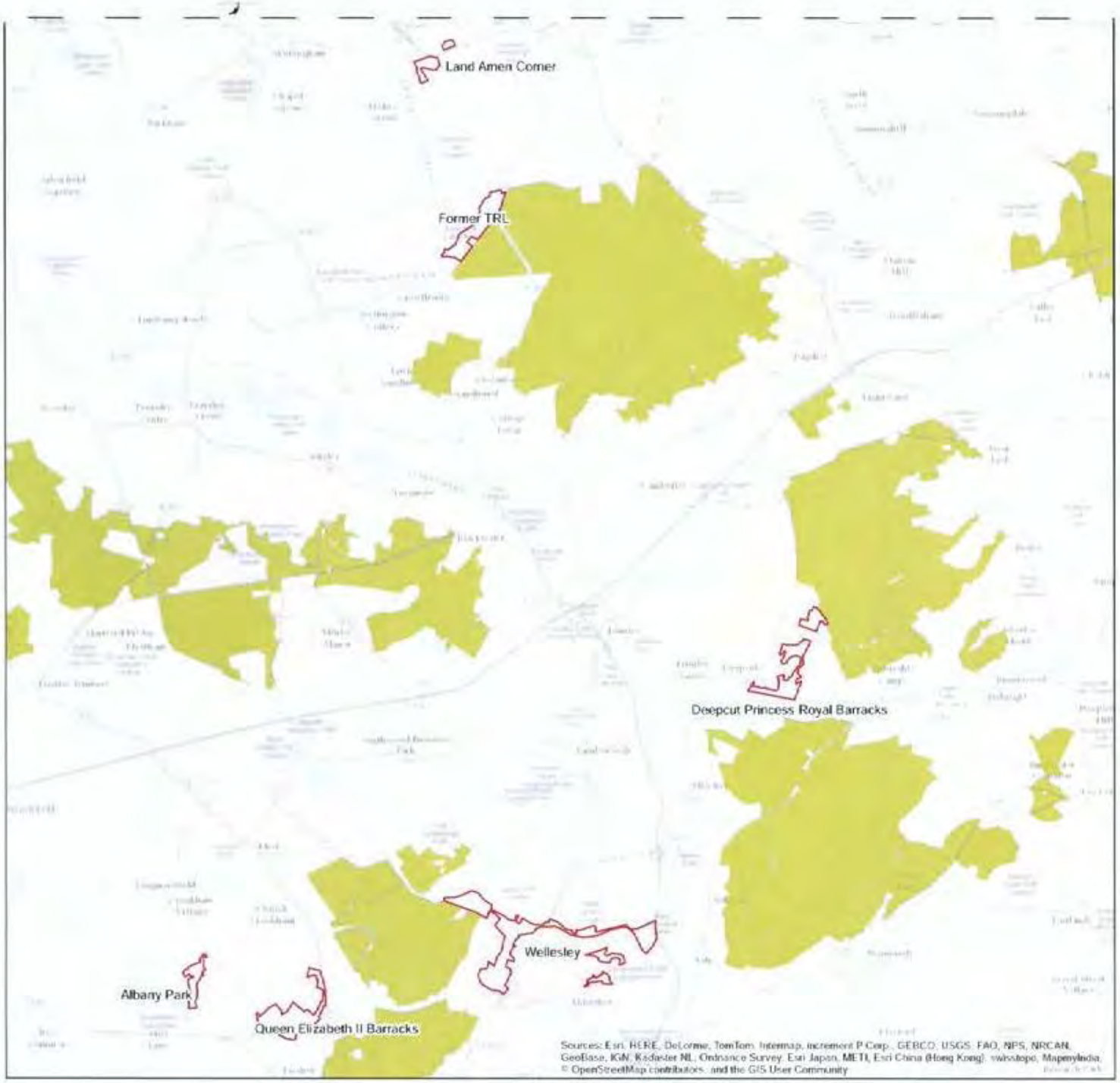

MAP 7 Consented SANGs

KEY

Consented SANGs

Special Protection Area (SPA)

SCALE: 1:70,000 at A3

0 1,000 2,000 3,000 4,000 Metres

N

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MAP 8 SANG Layout - Existing & Proposed Habitats

KEY

- Site boundary

Existing habitats to be enhanced

- Wet woodland
- Woodland
- Grassland

Proposed habitats

- Proposed woodland
- Trees and scrub
- Dry meadow grassland with scrub
- Short mown grassland
- Orchard
- Tump
- Pond
- Car park
- New hedgerow
- Swale

SCALE: 1:9,000 at A3

0 100 200 300 400 Metres

N

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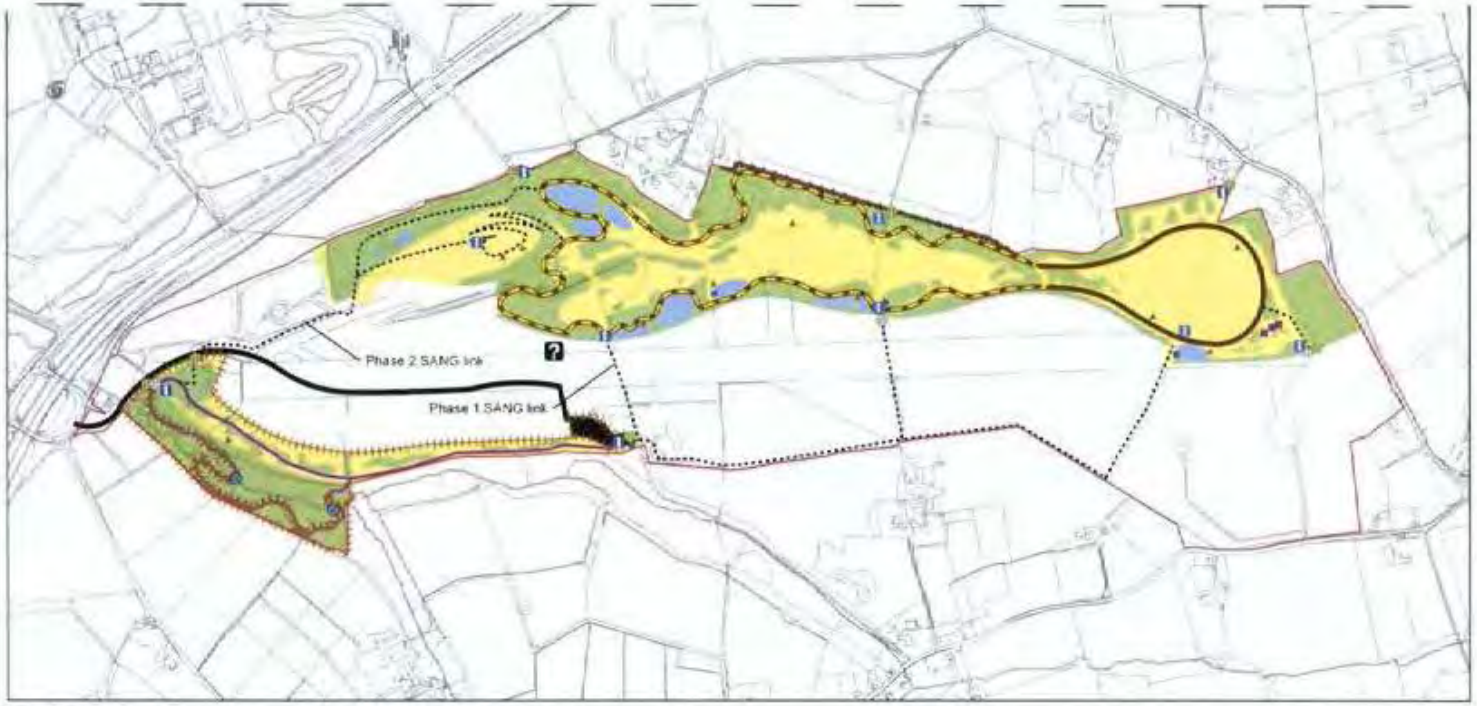

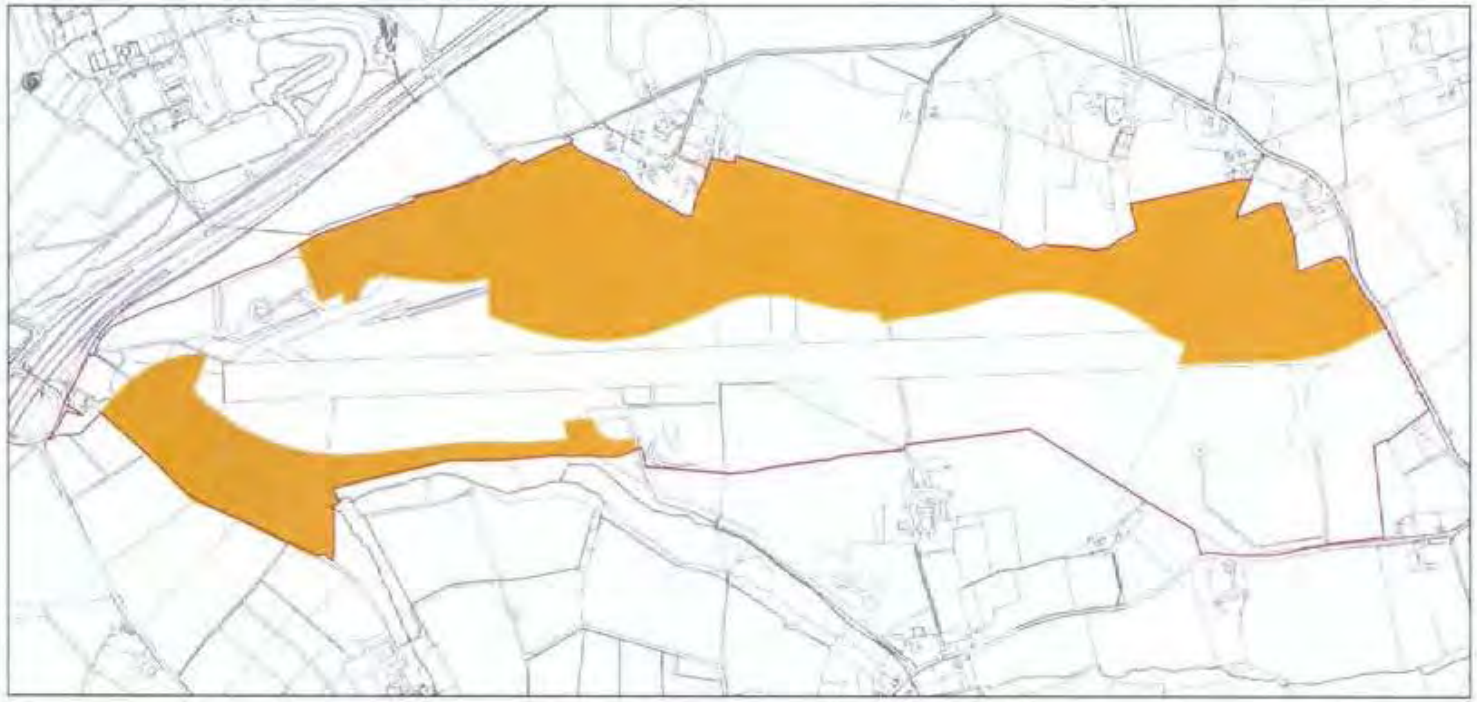

MAP 9 SANG Layout - Proposed Infrastructure

KEY

- Site boundary
- SANG boundary
- Wooded habitats
- Open grassland habitats
- Pond
- Car park
- Road link from A3 to car park
- 2.9km Northern SANG circular walk
- 3.9km Northern SANG circular walk
- 1.8km Southern SANG circular walk
- Other footpath links (3.8km)
- Boardwalk
- Fence
- Hedgerow
- Swale
- Visitor centre
- Kissing gate
- Field gate
- Footbridge
- Information board
- Bench
- Picnic bench
- Bin

SCALE 1:9,000 at A3

0 100 200 300 400 Metres

N

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P1467

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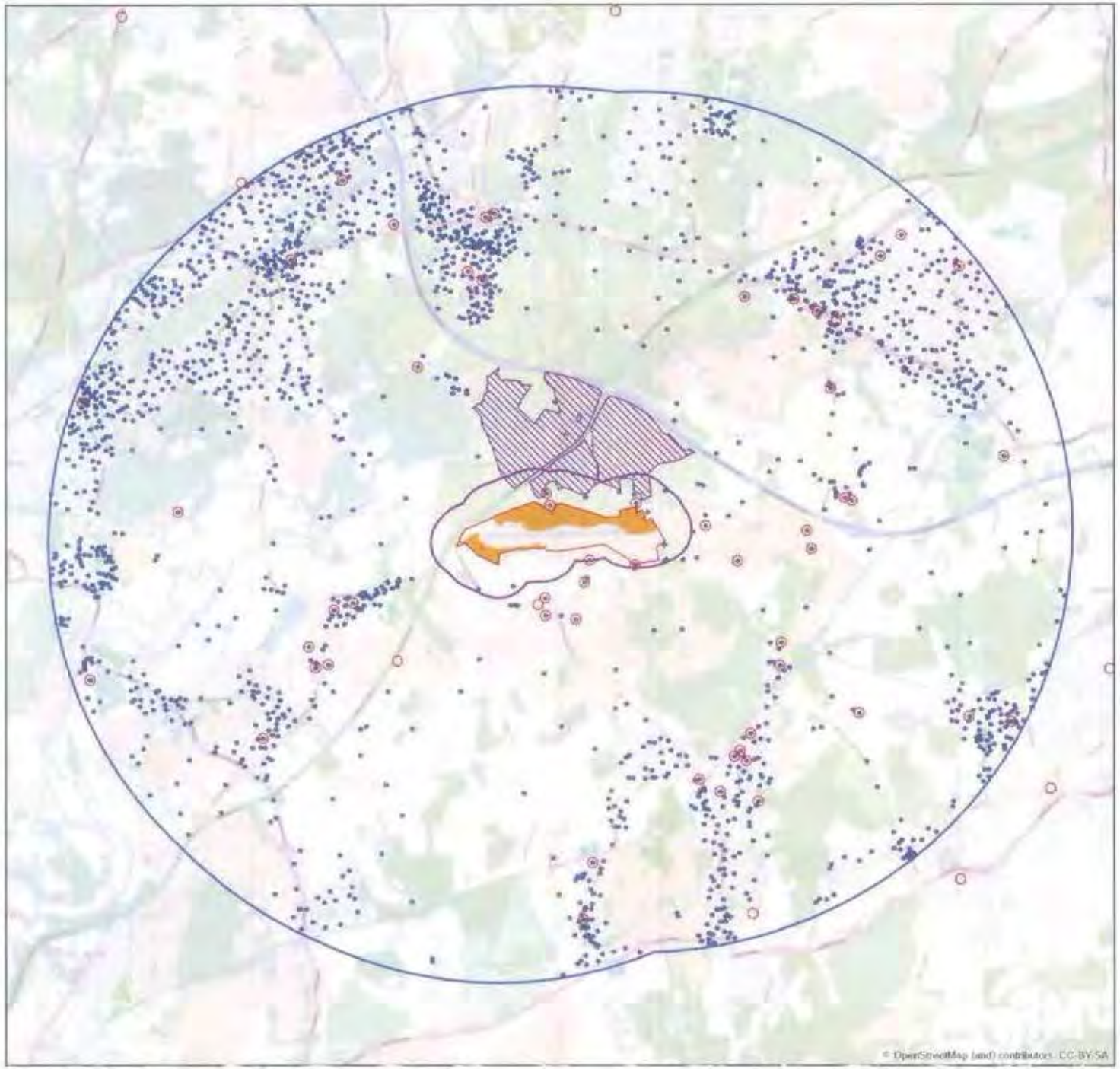

MAP 10 SANG Visitor Catchments

KEY

- Site boundary
- Special Protection Area (SPA)
- SANG
- 400m linear distance from SANG boundary (indicative walking catchment)
- 5km linear distance from SANG boundary (visitor driving catchment for SANG in excess of 20ha)
- Postcode origin of visitor to SPA (from Ecology Solutions visitor survey data)
- Residential postcode delivery point (from Royal Mail postcode dataset)

SCALE: 1:45,000 at A3

0 500 1,000 1,500 2,000 Metres

N

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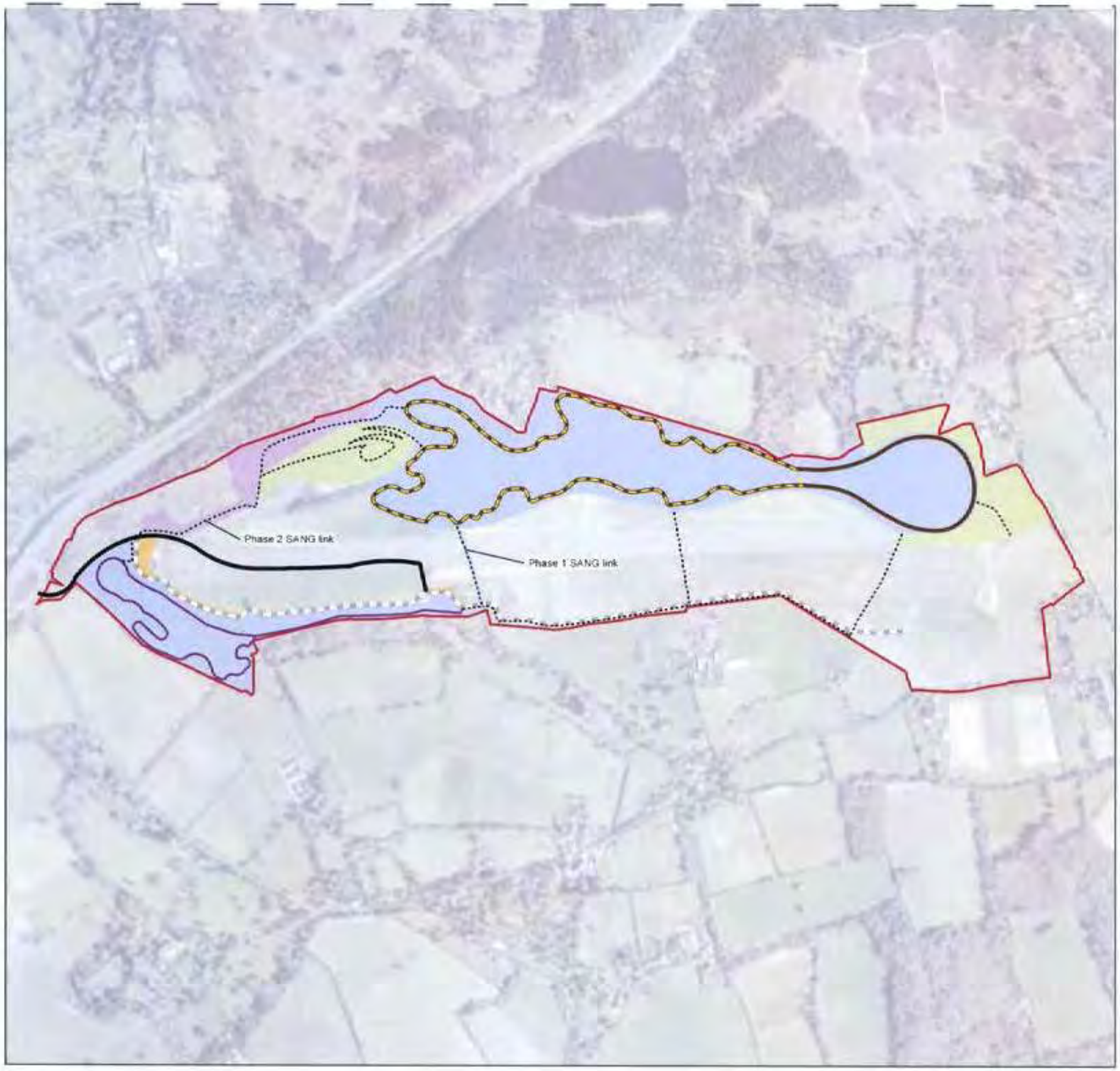

MAP 11 SANG Phasing

KEY

- Site boundary
- Phase 1 (38.7ha)
- Phase 2 (2.1ha)
- Phase 3 (8.4ha)
- Phase 4 (0.7ha)
- 2.9km Northern SANG circular walk
- 3.9km Northern SANG circular walk
- 1.8km Southern SANG circular walk
- Other footpath links (3.8km)
- Road link from A3 to car park
- Temporary construction access road

SCALE: 1:9,000 at A3

0 100 200 300 400 Metres

N

EPR

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PROJECT: Wisley Airfield

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P14-97

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MAP 12 Offsite PROW Improvements to be Delivered as Part of SPA Impact Avoidance Strategy

KEY

- Site boundary
- Special Protection Area (SPA)
- SANG boundary
- 2.9km Northern SANG circular walk
- 3.9km Northern SANG circular walk
- Southern SANG circular walk (1.8km)
- Boardwalk
- Other footpath links (3.8km)
- Offsite circular recreational route (4.2km)
- Road link from A3 to car park
- Information boards
- Parking
- Cafe
- Wildlife
- Wifi
- Bicycle hire
- Woodland lump

SCALE 1:10,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT Wisley Property Investments Ltd

PROJECT Wisley Airfield

DATE October 2015

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MAP 13 Assessment of Cat Predation Risk

KEY

- Site boundary
- Built development
- 400m linear distance from proposed housing area
- Nightjar 2010-2013 record
- Woodlark 2010-2013 record
- Nightjar 2014 record
- Woodlark 2014 record

SCALE: 1:12,000 at A3

0 100 200 300 400 Metres

N

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DATE: July 2015

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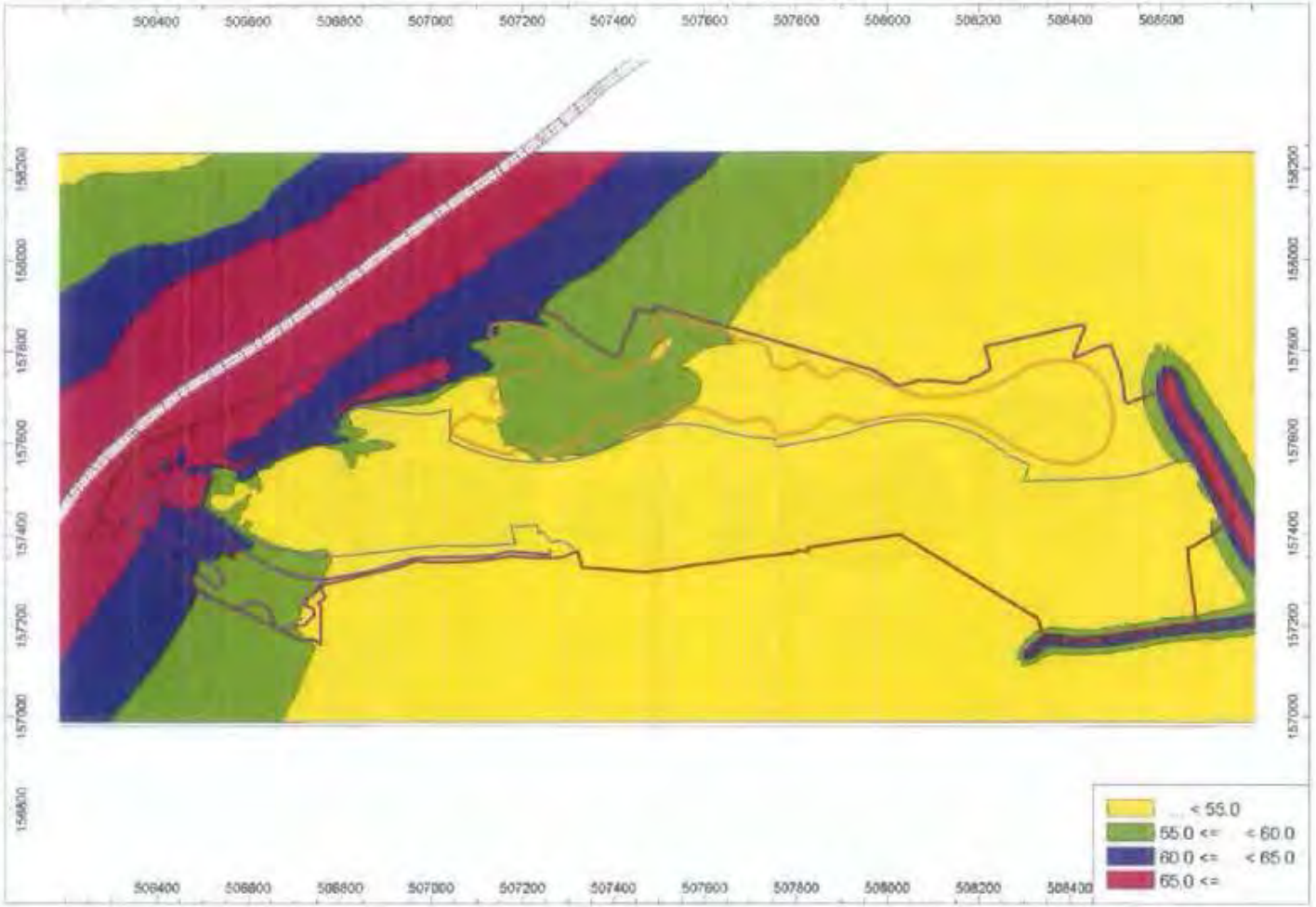

MAP 14 Operational Noise Contours with regard to proposed SANG

KEY

Site boundary

SANG boundary

Phase 1 Northern SANG circular walk (3.9km)

Phase 1 Southern SANG circular walk (1.8km)

Daytime Noise Contours at 1.5m above Ground (dB LAeq,16hour)

SCALE: 1:10,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments

PROJECT: Wisley Airfield

DATE: July 2015

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MAP 15 Drainage Catchments

KEY

Site boundary

Waterways - taken from OS Mastermap

+21m AOD +49m AOD

SCALE: 1:9,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments

PROJECT: Wisley Airfield

DATE: July 2015

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MAP 16 Areas where N deposition exceeds the lower critical load, and where the Process Contribution is in excess of 1% of the Lower Critical Load Value

KEY

- Wisley & Ockham Commons SSSI
- N deposition exceeding the lower critical load
- Acid Grassland
- Bank Verge Scrub
- Bracken
- Bracken Bramble Gorse Scrub
- Bracken Bramble Scrub
- Bracken Woodland
- Bramble Woodland
- Dry Heath
- Dry Heath and Bracken
- Humid Heath
- Mesic Grassland
- Molinia Grassland
- Molinia Heath

SCALE: 1:6,000 at A3

0 100 200 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments Ltd

PROJECT: Wisley Airfield

DATE: July 2015

MAP 17 Areas of NOx exceedance in Scenario A

KEY

Wisley & Ockham Commons SSSI

Areas of NOx exceedance in scenario A

SCALE: 1:11,000 at A3

0 100 200 300 400 Metres

N

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Ecological Planning & Research

CLIENT: Wisley Property Investments Ltd

PROJECT: Wisley Airfield

DATE: July 2015

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MAP 18 Areas of NOx exceedance and improvement in Scenario C with broad habitat types and Annex 1 birds

KEY

- Wisley & Ockham Commons SSSI
- Acid Grassland
- Bracken
- Dry Woodland and Scrub
- Heaths
- Mesic Grassland
- Road Verge Scrub
- Spoil Heap
- Wet Woodland
- Wetland
- Nightjar 2010-2013 record
- Woodlark 2010-2013 record
- Nightjar 2014 record
- Woodlark 2014 record
- Areas where NOx levels in exceedance and where PC > 1% of Critical Load
- Areas where NOx levels improved in relation to scenario A under scenario C and where improvement represents >1% of Critical Load
- Areas where NOx levels in exceedance and where scenario C results in improvement of > 1% of Critical Load

SCALE: 1:6,000 at A3

0 100 200 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments Ltd

PROJECT: Wisley Airfield

DATE: July 2015

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MAP 19 Areas of NOx exceedance and improvement in Scenario C with dryland habitats and Annex 1 birds

KEY

- Wisley & Ockham Commons SSSI
- Acid Grassland
- Bank Verge Scrub
- Bracken
- Bracken Bramble Gorse Scrub
- Bracken Bramble Scrub
- Bracken Woodland
- Bramble Woodland
- Dry Heath
- Dry Heath and Bracken
- Humid Heath
- Mesic Grassland
- Molinia Grassland
- Molinia Heath
- Nightjar 2010-2013 record
- Woodlark 2010-2013 record
- Nightjar 2014 record
- Woodlark 2014 record
- Areas where NOx levels in exceedance and where PC > 1% of Critical Load
- Areas where NOx levels improved in relation to scenario A under scenario C and where improvement represents >1% of Critical Load
- Areas where NOx levels in exceedance and where scenario C results in improvement of > 1% of Critical Load

SCALE: 1:6,000 at A3

0 100 200 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments Ltd

PROJECT: Wisley Airfield

DATE: July 2015

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MAP 20 Areas of NOx exceedance and improvement in Scenario C with wetland habitats and Annex 1 birds

KEY

- Wisley & Ockham Commons SSSI
- Alder Wood
- Bog Woodland
- Oligotrophic Pools
- Oligotrophic Water
- Poor Fen
- Reed Bed
- Willow Scrub
- Nightjar 2010-2013 record
- Woodlark 2010-2013 record
- Nightjar 2014 record
- Woodlark 2014 record
- Areas where NOx levels in exceedance and where PC > 1% of Critical Load
- Areas where NOx levels improved in relation to scenario A under scenario C and where improvement represents >1% of Critical Load
- Areas where NOx levels in exceedance and where scenario C results in improvement of > 1% of Critical Load

SCALE: 1:3,500 @ A3

0 100 200 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments Ltd

PROJECT: Wisley Airfield

DATE: July 2015

Appendix 1
Assessment of Reasonable Alternatives

Assessment of Reasonable Alternatives, compiled by Savills, February 2015

1.0 Introduction

There is a need to balance sustainable economic growth with protecting environmental aspects. Guildford Borough and the surrounding authorities have strong economies which leads to development pressure. There are a number of environmental constraints in Guildford Borough, including the Thames Basin Heath Special Protection Area (SPA) and Surrey Hills Area of Outstanding Natural Beauty (AONB).

Having a Local Plan in place (or emerging Local Plan) will lead to greater sustainable outcomes. A Local Plan is vital to direct development to sustainable locations. No development plan (with a similar level of growth) will negatively impact upon the sustainability objectives. The National Planning Policy Framework (NPPF) should be provided significant weight in plan making and decision taking. Where there is no up to date plan, the weight applied to factors such as the absence of a five year housing land supply increases.

WPI made comments on the Sustainability Appraisal (SA) (August 2014) and Habitats Regulation Assessment (HRA) of the Draft Local Plan Strategy and Sites (July 2014). It referred to the work being high level, with a more qualitative review of development sites being necessary to ascertain likely significant effects.

The Sustainability Appraisal (SA) must consider the likely significant effects that the draft Local Plan in totality may have on environmental, economic and social factors in the Borough, along with a robust assessment on all reasonable alternatives. This assessment helps avoid and mitigate any adverse effects. The HRA considers whether the policies and draft allocations will have an impact upon the SPA.

The Council's spatial strategy is set out in Draft Local Plan Policy 2. The pre-text to this policy and Table 1 identifies a number of components which contribute to growth over the plan period. The supporting SA assesses this strategy noting that release of some Green Belt is necessary to meet objectively assessed housing need ("OAN") (even the lower end of the identified need). The NPPF is clear that Local Authorities must seek to meet the OAN wherever possible.

The table below was included within WPI's response to the Draft Local Plan (pages 26-30). The Interim SA focused on more of a spatial analysis rather than qualitative assessment. The table demonstrates the sustainable nature of the proposals at Wisley Airfield and how it meets each of the objectives set out in the SA in turn.

Objective	GBC Assessment	WPI comments
1 To provide sufficient housing of a suitable mix taking into account local housing need, affordability, deliverability, the needs of the economy and travel patterns	Likely to contribute significantly towards housing target	WPI concur. Proposal will contribute up to 2,100 dwellings with a significant number of affordable dwellings subject to policy and viability.
2. To facilitate improved health and well-being of the population including enabling people to stay independent and reducing inequalities in health	The site is 5140m from a health care facility, 1140m from a recreation ground, 2360m from town, 4960m from primary school and over 6000m from a secondary school	This analysis just focuses on existing facilities. The proposal as a new settlement incorporates a health care facility, a primary school, retail, employment opportunities. In addition bus services will be provided along with a dedicated cycle path, increasing accessibly to secondary schools. Wisley New Settlement is also within an immediately rural area, increasing access to the countryside.
3. To reduce the risk of flooding and the resulting detriment to public well-being, the economy and the environment	Site within Flood Zone 1 It is assumed all sites in Flood Zone 3 are at significant risk of flooding	The site is not at risk of flooding. Wisley airfield is one of the 48 sites in Flood Zone 1. The remainder are in Flood Zones 2/3, with 14 sites in Flood Zone 3. At least 55ha of the proposal is proposed for SANGS, and there are further areas for open space (approx. 15.9ha), these areas with no built form mitigate any off-site impacts. SuDs shall also be provided.
4. To create and maintain safer and more secure communities	This objective relates more to design measures and detailed information that would be present in a planning application and therefore no criteria have been proposed (to assess sites in this regard).	There is an opportunity through good design and provision of facilities to tackle crime to ensure safe communities. The Building Regulations are also due for amendment re: Crime prevention measures.
5. To reduce poverty and social exclusion for all sectors of the community	It is not considered possible to spatially assess against this objective i.e. it cannot be shown how the physical attributes of a site area can meaningfully illustrate the effects on this objective	There is an acute housing need, and Wisley constitutes an excellent opportunity to deliver much needed affordable dwellings. The new settlement will make provision for elderly accommodation (either open C3 or a sheltered C2 use). This will ensure that displacement of family members to locations beyond an easily commutable distance does not occur and will ensure the provision of a balanced community.
6. To create and sustain vibrant communities	It is not considered possible to spatially assess against this	The proposal will significantly contribute to the aims of

Objective	GBC Assessment	WPI comments
	objective i.e. it cannot be shown how the physical attributes of a site area can meaningfully illustrate the effects on this objective	sustainable development and offer a much needed increase in the level of housing choice for current and future residents of Guildford Borough. The masterplan proposals were grounded in an appreciation of sustainability principles from the outset.
7 To make the best use of previously developed land and existing buildings	Previously developed land and existing buildings must be prioritised. Wisley airfield is partly previously developed	Wisley site includes c.74 acres of concrete and hardstanding, equating to 25.7% of the land. Wisley contains the largest previously developed site in the Guildford Borough Green Belt
8 To conserve and enhance biodiversity and the natural environment	The Interim SA notes that 47% of land in the borough is within 400 metres to 5 km of the SPA. The SPA is particularly sensitive to nitrogen deposition and the traffic could lead to more nitrogen emissions. The site is 1,600 metres from the Thames Basin Special Protection Area (SPA) and SSSI. There is a Site of Nature Conservation Interest (SNCI) that intersects the site. It is not in an Area of Outstanding Natural Beauty (AONB). HRA concluded that there should be no adverse effects on the Thames Basin SPA.	Whilst Wisley airfield is within this 47%, it provides sufficient provision of Suitable Alternative Natural Green space (SANGs) to mitigate any impacts The principal focus of the new settlement is sustainability, the scale of the proposal allows implementation of various alternatives to the car, including regular bus services and dedicated cycle paths and footpaths. Furthermore there will be publicly accessible charging points for electric cars throughout the settlement. Importantly, a development plan is vital to direct development to sustainable locations. No development plan (with a similar level of growth) will negatively impact upon air quality and SPA. Planned growth, with a principle focus of alternatives to the car, as well as technological advances and new Directives, means that there will be a lesser impact on the SPA. It is also important to consider emerging technology and the EU Directive for light-duty vehicles (Regulation 715/2007) when considering the impacts of cars in 20 years time. Each revision to the Directive reduces car emissions, the latest amendment which is due to come into force shortly

Objective	GBC Assessment	WPI comments
		reduces nitrogen oxide from diesel cars from 180mg/km to 80 mg/km. All of the aspects listed above demonstrate that the development of the site will have a neutral impact on the SPA.
9. To protect, enhance, and where appropriate make accessible, the archaeological and historic environments and cultural assets of Guildford, for the benefit of residents and visitors	The site is within 1,130m of a registered/ historic park, 3350m from Schedule Ancient Monument, 1250m from Area of High Archaeological Potential and 1,110m from a Listed Building	Wisley Airfield is a reasonable distance from the heritage assets listed in the SA analysis. When developing detailed proposals care will be undertaken to protect and enhance Conservation Areas.
10. To achieve a pattern of development which minimises journey lengths and encourages the use of sustainable forms of transport (walking, cycling, bus and rail)	The Interim SA report considers that without the development plan that any increase in population and associated travel has the potential to adversely affect air quality. The site is 1,160m from an A road and 3,490m from a railway station	WPI concur, a development plan will ensure future development is sustainably located, thereby reducing the need to travel by car. Development at Wisley airfield will improve local pedestrian and cycle connectivity and public transport services. Proposals also incorporate up to a maximum of 7,260 sq m of new commercial, retail, leisure and community floorspace, meaning that there are services and employment opportunities locally, reducing the need to travel by car
11. To minimise the use of best and most versatile agricultural land and encourage the remediation of contaminated land	GBC notes that 78% of all sites are identified on agricultural land. The site is non-agricultural	Over half of the Wisley airfield site is arable farmland. The scale of the proposal means that development of this site will reduce the need to release other agricultural sites. The redevelopment of the former runway also creates the opportunity to remediate previously developed land.
12. To reduce waste generation and achieve the sustainable management of waste	It is not considered possible to spatially assess against this objective i.e. it cannot be shown how the physical attributes of a site area can meaningful illustrate the effects on this objective.	Through good design waste minimisation and increased recycling may be achieved. Policy may encourage or require this, which is a relevant matter to test in the SA/SEA.
13. To maintain and improve the water quality of the borough's rivers and groundwater, and to	It is not considered possible to spatially assess against this objective i.e. it cannot be shown how the physical	Through good design, a neutral or net benefit for drainage may be achieved, plus treatment of adjacent or nearby

Objective	GBC Assessment	WPI comments
achieve sustainable water resource management	attributes of a site area can meaningful illustrate the effects on this objective.	watercourses. Policy may encourage or require this, which is a relevant matter to test in the SA/SEA.
14. To mitigate the causes and adapt to the effects of climate change through reducing emissions of greenhouses gases	It is not considered possible to spatially assess against this objective i.e. it cannot be shown how the physical attributes of a site area can meaningful illustrate the effects on this objective.	Similarly to point 10, a development plan will ensure that development is sustainably located, thereby reducing the need to travel and ultimately reducing greenhouse gases. The scale of the proposal at Wisley airfield enables the incorporation of new commercial, retail and leisure and community floorspace. Through design, the promotion of public transport may be encouraged.
15. To maintain Guildford Borough and Guildford town's competitive economic role	It is not considered possible to spatially assess against this objective i.e. it cannot be shown how the physical attributes of a site area can meaningful illustrate the effects on this objective.	The proposal will provide a unique opportunity to deliver significant road infrastructure improvements to assist the delivery of the whole Local Plan, deliver on-site employment floorspace, and to support the local economy whilst providing a high quality, sustainable settlement in which to accommodate the Borough's growing workforce.
16. To facilitate appropriate development opportunities to meet the changing needs of the economy		The scheme provides up to a maximum of 7,260 sq m of new commercial, retail, leisure and community floorspace.
17. To enhance the borough's rural economy	It is not considered possible to spatially assess against this objective i.e. it cannot be shown how the physical attributes of a site area can meaningful illustrate the effects on this objective.	Through design and the infrastructure provision provided a series of pedestrian and bridleway enhancements may be realised, all of which shall have indirect benefits for the rural economy.

2.0 Guildford Borough Constraints

Guildford Borough is constrained, with most of the land outside the urban areas being designated as Metropolitan Green Belt (89% of the total land in the Borough).

The Surrey Hills AONB lies within the Borough and is a key landscape feature. AONBs are a national designation and their value is reflected in the NPPF. The NPPF identifies that "*great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to landscape and*

scenic beauty" (paragraph 115). The Interim SA (July 2014) identifies that areas that are afforded protection through national designations should retain their character (page 20).

The Interim SA identifies that 47% of land in the Borough is within 400 metres to 5 km of the SPA, and 6% is within 400 metres of a SPA site, in which no new homes may be built. The map at Annex 1 shows the location of the proposed development sites in relation to the areas of SPA. This demonstrates that a significant amount of planned development is within the same zone from the SPA as Wisley Airfield.

A number of housing sites identified in the Draft Local Plan are in Flood Zones 2/3, with 14 of these being in Flood Zone 3. The NPPF identifies that development should be directed away from areas at risk of flooding, it goes onto state that "*development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding*" (paragraph 101). Wisley airfield is situated in Flood Zone 1, outside an area at risk of flooding.

The Interim SA also refers to the rural-urban fringe of Guildford, Ash and Tongham, with particular features including the River Wey and its water meadows, the floodplain gravel terraces of River Wey to the north of Guildford and the role of these in creating a clear 'gap' and sense of separation between the town and outlying residential areas. Furthermore the sandy soils and London clay to the north of Guildford and east of Ash and Tongham create a distinctive landscape of wooded and heathland commons. Concern is expressed in the SA over the possibility of development and recreational pressure in the future and the impact of urban developments on the views into and out of the surrounding 'rural fringe' (page 19).

A further key constraint in Guildford is transport. The Interim SA identifies that there are four major roads that pass through the borough, with two strategic roads being the M25 and the A3 trunk road. Traffic flows experienced on these roads are higher than those experienced nationally. The SA notes that sections of the A3 trunk road through Guildford are operating in excess of their capacity.

3.0 Why Wisley Airfield is the most appropriate when considered against all the reasonable alternatives?

This section considers the constraints identified above and assesses them in relation to Guildford Borough's approach and the reasonable alternatives set out in the Draft Local Plan Sites and Strategy (July 2014).

Housing Need

The Guildford Borough Draft Local Plan (July 2014) sets a housing target of 13,040 dwellings over the plan period (2011-2031). The Interim SA recognises the high demand for housing in the area. The latest SHMA (December 2014) identifies that there is a total need of 798 dwellings per annum (net need of 542 units). The increase of population in future years, is only likely to further exacerbate current shortages of housing and increase housing need.

A new settlement at Wisley Airfield will provide 2,100 homes, one of the largest proportions of housing of any of the identified sites in the Draft Local Plan (16% of the total housing). The only other proposed sites that can provide a similar number of units are Blackwell Farm and Gosden Hill. Blackwell Farm sits partly in the AONB and would have additional traffic impacts given its location west of Guildford. Gosden Farm has challenges with accessing public transport in the short term. Both the other alternatives, like Wisley, sit within the 5km radius of the SPA.

Green Belt

Given that 89% of the Borough is Green Belt, Guildford Borough recognise that some land will need to be released from the Green Belt to meet future development needs. The Strategic Housing Land Availability Assessment (SHLAA, June 2014) identifies that Guildford Borough made an assumption over Green Belt delivery in the five year land supply and is largely reliant on this as a source of supply, with 73% of total supply.

An independent assessment of the Green Belt, undertaken by Pegasus (April, 2014 update), has been prepared to inform and support the emerging Guildford Borough Local Plan and identified that of the five purposes of the Green Belt, Wisley Airfield effectively only contributes to one purpose (encroachment), and hence is a suitable Potential Development Area ('PDA'). The same study identified that part of the Gosden Hill site contributed to two purposes of the Green Belt. Similarly part of the Blackwell Farm site was identified as having a high sensitivity to the Green Belt purposes (drawing ref:BNL.0287_36-A).

Previously Developed Land

The Interim SA identifies that previously developed land should be prioritised. The NPPF concurs stating that "*planning policies and decisions should encourage the effective use of land by re-using land that has been previously developed*" (paragraph 111). Wisley site includes circa 30ha of concrete and hardstanding, equating to 25.7% of the site. Wisley is the largest previously developed site in the Guildford Borough Green Belt. None of the other strategic sites contain such a large proportion of previously developed land.

Impacts on SPA

The South East Plan has been revoked, though policy NRM6 was retained. This states that: *"Priority should be given to directing development to those areas where potential adverse effects can be avoided without the need for mitigation measures"*. The South East Plan policies, when drafted, applied on the regional level, as interpreted within local planning policy and decision making. Since the revocation of Regional Plans, and the Localism Act, the NPPF outlines that planning policy and decision making be based on local planning. Policy NRM6 must therefore be interpreted in a Guildford Borough context.

Draft Policy 66 is within the 400m – 5km buffer zone of the Thames Basin SPA, as are many other sites, including both the other strategic sites that are of a similar scale (i.e. Gosden Hill and Blackwell Farm). The map at Annex 1 shows the location of all draft allocations in the Draft Local Plan. It demonstrates that there are a number of sites a similar distance from the SPA as Wisley airfield, which will all require mitigation measures to come forward. Very few proposed site allocations within Guildford Borough fall outside the 5km TBH consultation zone, and would not be sufficient alone to deliver the housing numbers proposed by GBC, which comprise the objectively assessed housing needs (OAN) required by national policy. There is nothing within the NPPF that suggests that the OAN be altered to reflect the considerations outlined by NRM6. The interpretation of NRM6 rightly applies to the Guildford Borough Context; in that context it would be impossible to deliver anywhere near the level of housing required by the OAN without a suite of reasonable alternative development sites, all of which are located in the 400m – 5km buffer zone.

The Thames Basin Heath SPA Avoidance Strategy 2009-2014 aims to overcome negative effects on the SPA though provision of Suitable Alternative Natural Green Space (SANG) to attract people away from the SPA and hence reduce pressure on it. It is acknowledged that housing delivery could be effectively mitigated by implementation of the strategically agreed Thames Basin Heath Delivery Framework with provision of 8 ha per 1,000 population of SANG and contributions to the Strategic Access Management and Monitoring (SAMM) programme.

The application at Wisley airfield proposes significantly more SANG than the guidance suggests. The Wisley airfield proposal equates to approximately 13% of the total provision of SANG for the borough. This is the most extensive SANG proposed in the whole Borough. A bespoke SAMM Plus Strategy is also proposed to draw people to countryside recreational routes outwith the Application Site and outwith the SPA. Provision of a dedicated Wisley and Ockham Warden, and a package of educational measures, is also proposed to improve public education and to manage the existing and future effects of public access on the SPA. By virtue of such provisions, the proposals seek to manage not only the effects generated by the scheme but also make contributions towards managing the baseline of recreational pressure on the SPA, ensuring a fully integrated and sustainable approach to impact avoidance and mitigation.

These aspects all demonstrate that the development of Wisley airfield will have at least a neutral impact on the SPA.

Biodiversity

The scheme has been designed to not only ensure no significant impacts on features of nature conservation value within the site, but to deliver significant biodiversity enhancements in line with the principles of the NPPF. Through the SANG provision, some 50ha of semi-natural open space with a variety of habitats is to be delivered. The SANG will be managed to not only provide the necessary recreational resource that is required to mitigation harm to the SPA, but also to restore degraded wildlife habitats, create new wildlife habitats including wet and dry meadow, woodland, hedgerow, ponds and scrub, and to manage these habitats to maximise their biodiversity value in perpetuity. Noteworthy contributions towards the aims of the Surrey Biodiversity Action Plan will therefore be delivered.

Transport

By virtue of its location on the London-side of Guildford town, the site would have reduced impacts on the constrained A3 corridor through Guildford town when compared with alternative housing sites, including the Blackwell Farm site.

Deliverability

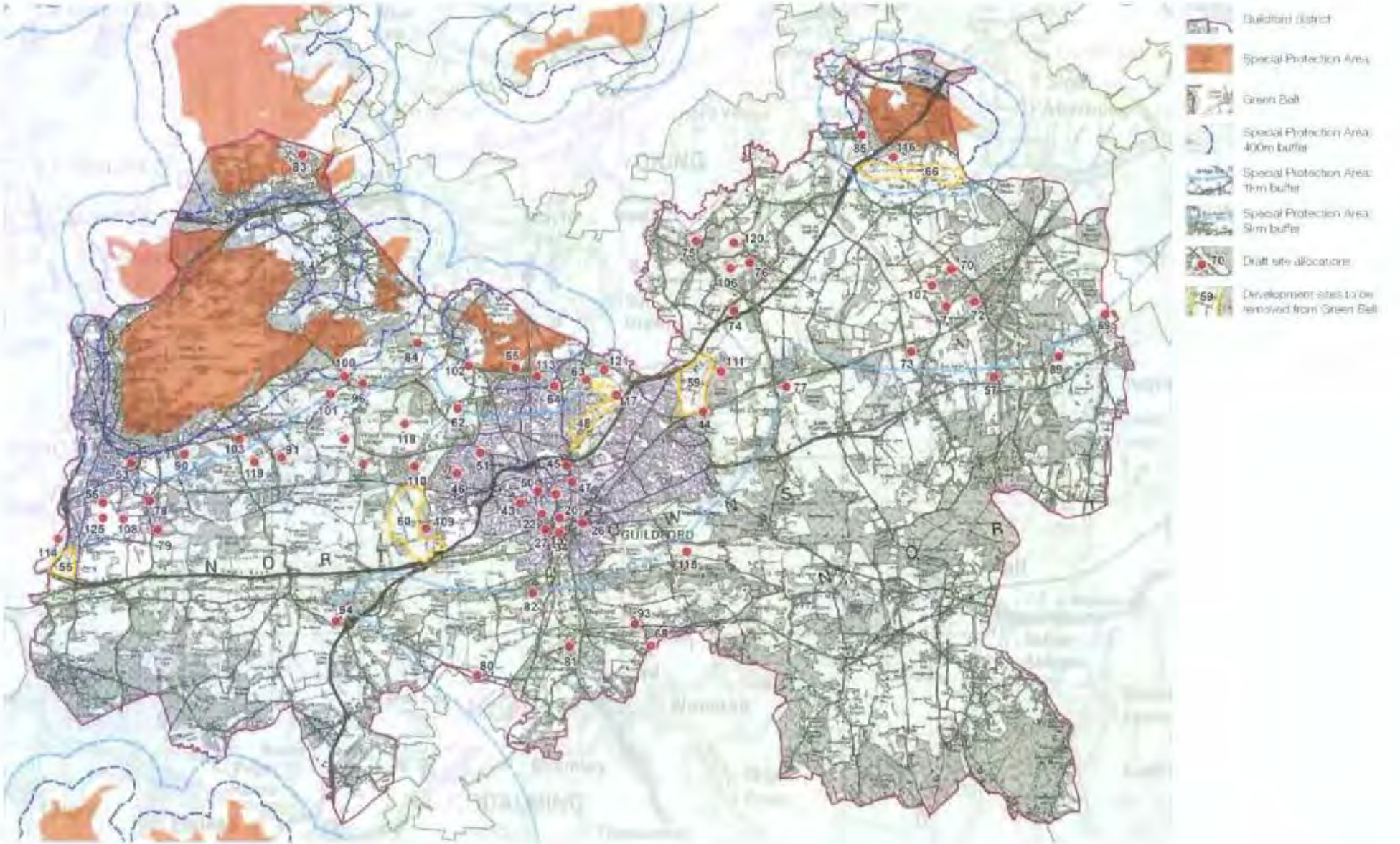
There are no other large strategic sites that are deliverable in the short term. The site at Wisley airfield is in single ownership and is readily available. The submission of the outline application demonstrates this. Based on the phasing plan Wisley airfield will deliver approximately 443 units over the next five years (699 units 2015-2020). The NPPF recognises that delivery of land supply is just as important as the supply itself.

4.0 Conclusion

The Draft Local Plan (July 2014) Policy 2 sets out the development strategy for the Borough over the plan period (2011-2031). Table 1 of the Draft Local Plan identifies the different components which make up the housing supply. All the components are necessary to deliver the scale of growth identified in the Local Plan. Nonetheless as demonstrated above, when considering sites of a similar scale, Wisley is the most appropriate for the following reasons:

- The scale of the site means that it will deliver 2,100 units (16% of the total housing requirement).

- It is the largest previously developed site in the Borough. Guildford Borough and the NPPF encourage the effective use of brownfield land;
- The independent GBCS identifies that the site only contributes to one purpose of the Green Belt
- The site is relatively far from the nearest settlement; it is not within an AONB and is well screened in landscape terms;
- The location of the site to the north of Guildford, means that site would have reduced impacts on the constrained A3 corridor through Guildford town;
- It is deliverable in the short term;
- Like many other of the proposed development sites, Wisley sits within the 400m – 5km zone of the SPA;
- Provision of SANGs at 10ha per 1,000 population, along with access management measures, biodiversity enhancement and green infrastructure measures means that the proposals will have at least a neutral impact on the SPA and will deliver net gains for biodiversity.



savills

Guildford District
Sites within the Green Belt

Appendix 2
Correspondence with Natural England

Date: 23 January 2014
Our ref: 108772
Your ref: 14/S/00001

Tara Taylor
Planning case officer
Guildford Borough Council

BY EMAIL ONLY

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Dear Tara Taylor

Planning consultation: Request for a Scoping Opinion in accordance with Regulation 13 of the Town and Planning Country Planning (Environmental Impact Assessment) (England) Regulations 2011
Location: Wisley Airfield, Ockham Lane, Ockham

Thank you for seeking our advice on the scope of the Environmental Statement (ES) in your consultation dated 09 January 2014 which was received by Natural England on the same date.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Case law[1] and guidance[2] has stressed the need for a full set of environmental information to be available for consideration prior to a decision being taken on whether or not to grant planning permission. Appendix A to this letter provides Natural England's advice on the scope of the Environmental Impact Assessment (EIA) for this development.

Should the proposal be amended in a way which significantly affects its impact on the natural environment then, in accordance with Section 4 of the Natural Environment and Rural Communities Act 2006, Natural England should be consulted again.

We would be happy to comment further should the need arise but if in the meantime you have any queries please do not hesitate to contact us. For any queries relating to the specific advice in this letter only please contact Julia Coneybeer on 0300 060 4062. For any new consultations, or to provide further information on this consultation please send your correspondences to consultations@naturalengland.org.uk.

We really value your feedback to help us improve the service we offer. We have attached a feedback form to this letter and welcome any comments you might have about our service.

Yours sincerely

Julia Coneybeer

Lead advisor, Land Use Operations (Ashford)

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[1] Harrison, J in *R. v. Cornwall County Council ex parte Hardy* (2001)
[2] *Note on Environmental Impact Assessment Directive for Local Planning* Authorities Office of the Deputy Prime Minister (April 2004) available from http://webarchive.nationalarchives.gov.uk/+/http://www.communities.gov.uk/planningandbuilding/planning/sustainabilityenvironmental/environmentalimpactassessment/noteenvironmental/

Annex A – Advice related to EIA Scoping Requirements

1. General Principles

Schedule 4 of the Town & Country Planning (Environmental Impact Assessment) Regulations 2011, sets out the necessary information to assess impacts on the natural environment to be included in an ES, specifically:

- A description of the development – including physical characteristics and the full land use requirements of the site during construction and operational phases.
- Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.
- An assessment of alternatives and clear reasoning as to why the preferred option has been chosen.
- A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors.
- A description of the likely significant effects of the development on the environment – this should cover direct effects but also any indirect, secondary, cumulative, short, medium and long term, permanent and temporary, positive and negative effects. Effects should relate to the existence of the development, the use of natural resources and the emissions from pollutants. This should also include a description of the forecasting methods to predict the likely effects on the environment.
- A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.
- A non-technical summary of the information.
- An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.

It will be important for any assessment to consider the potential cumulative effects of this proposal, including all supporting infrastructure, with other similar proposals and a thorough assessment of the 'in combination' effects of the proposed development with any existing developments and current applications. A full consideration of the implications of the whole scheme should be included in the ES. All supporting infrastructure should be included within the assessment.

2. Biodiversity and Geology

2.1 Ecological Aspects of an Environmental Statement

Natural England advises that the potential impact of the proposal upon features of nature conservation interest and opportunities for habitat creation/ enhancement should be included within this assessment in accordance with appropriate guidance on such matters. Guidelines for Ecological Impact Assessment (EcIA) have been developed by the Institute of Ecology and Environmental Management (IEEM) and are available on their website.

EcIA is the process of identifying, quantifying and evaluating the potential impacts of defined actions on ecosystems or their components. EcIA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal.

The National Planning Policy Framework sets out guidance in S.118 on how to take account of biodiversity interests in planning decisions and the framework that local authorities should provide to assist developers.

2.2 Internationally and Nationally Designated Sites

The ES should thoroughly assess the potential for the proposal to affect designated sites. European sites (eg designated Special Areas of Conservation and Special Protection Areas) fall

within the scope of the Conservation of Habitats and Species Regulations 2010. In addition paragraph 118 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites.

Under Regulation 61 of the Conservation of Habitats and Species Regulations 2010 an appropriate assessment needs to be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site.

Should a Likely Significant Effect on a European/ Internationally designated site be identified or be uncertain, the competent authority (in this case the Local Planning Authority) may need to prepare an Appropriate Assessment, in addition to consideration of impacts through the EIA process.

Sites of Special Scientific Interest (SSSIs) and sites of European or international importance (Special Areas of Conservation, Special Protection Areas and Ramsar sites)
The development site is adjacent to the following designated nature conservation sites:

- Ockham and Wisley Commons Site of Special Scientific Interest (SSSI)
- Thames Basin Heaths Special Protection Area (SPA)

Further information on the SSSI and its special interest features can be found at www.natureonthemap.naturalengland.org.uk. The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within this site and should identify such mitigation measures as may be required in order to avoid, minimise or reduce any adverse significant effects.

European site conservation objectives are available on our internet site here.

In this case the proposal is not directly connected with, or necessary to, the management of a European site. In our view it is likely that it will have a significant effect on internationally designated sites and therefore will require assessment under the Habitats Regulations. We recommend that there should be a separate section of the Environmental Statement to address impacts upon European and Ramsar sites entitled 'Information for Habitats Regulations Assessment', and should include but not necessarily be restricted to consideration of the following impacts:

- *Disturbance*

  Disturbance impacts on the breeding bird species for which the SPA is notified, Dartford warbler, woodlark and nightjar, should be considered during both construction and operation. This should include visual and noise disturbance resulting from construction activities, and recreational disturbance from visitors and dogs and lighting from the development during operation, and how this can be avoided or mitigated. The EIA Scoping documentation refers to incorporation of Suitable Alternative Natural Greenspace (SANG) to address the impact of increased recreational pressure on the SPA. Natural England is due to engage with the applicants on pre-application advice on this critical aspect of the proposals.

- *Edge effects*

  Given the proximity of proposed housing to the SPA, urban edge effects on the site should be considered including increased incidence of heathland fires and cat predation.

- *Pollution*

  Hydrological pollution – impacts from water pollution via drainage and surface run-off during construction and operation should be addressed, in particular in the vicinity of the watercourse present at the northern boundary of the proposed application site near the Mount Pleasant Cottages which flows to the SSSI.

  Air pollution – an air quality assessment should be undertaken to establish likely impacts on SPA habitat from dust production during construction and traffic emissions during construction and operation. A clear breakdown of the air quality pollutants to be emitted by the proposals, including secondary pollutants, and those generated by any traffic to and from the works, should be provided. In addition, a full assessment should be made of the impacts of the aforementioned pollutants on the SPA. Information on the effects of nutrient nitrogen and acid deposition on the SPA can be found at http://www.apis.ac.uk/.

  Of particular concern are the potential effects of nutrient nitrogen and acid deposition on the supporting habitat of the SPA birds. An assessment of the percentage contribution of the proposals to emissions, in terms of critical loads for nitrogen and acid deposition on the SPA, should be made. The background levels should be combined with the proposed contribution to emissions from the proposals, to produce a joint percentage or 'environmental load', also expressed as a percentage of the critical load for the SPA. The pH of the SPA and the potential buffering capacity of the substrate, should also be taken into account.

- *In combination assessment*

  The impacts of the proposals will need be considered in conjunction with any other permitted/ proposed plans or projects which may impact on the Thames Basin Heaths SPA.

2.3 Regionally and Locally Important Sites

The EIA will need to consider any impacts upon local wildlife and geological sites. The proposed site occupies the Wisley Field (Wisley Airfield) Site of Nature Conservation Importance (SNCI).

Local Sites are identified by the local wildlife trust, geoconservation group or a local forum established for the purposes of identifying and selecting local sites. They are of county importance for wildlife or geodiversity. The Environmental Statement should therefore include an assessment of the likely impacts on the wildlife and geodiversity interests of such sites. The assessment should include proposals for mitigation of any impacts and if appropriate, compensation measures. Contact the Surrey Wildlife Trust for further information.

2.4 Protected Species - Species protected by the Wildlife and Countryside Act 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2010

The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats). Natural England does not hold comprehensive information regarding the locations of species protected by law, but advises on the procedures and legislation relevant to such species. Records of protected species should be sought from appropriate local biological record centres, nature conservation organisations, groups and individuals; and consideration should be given to the wider context of the site for example in terms of habitat linkages and protected species populations in the wider area, to assist in the impact assessment.

The conservation of species protected by law is explained in Part IV and Annex A of Government Circular 06/2005 *Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System*. The area likely to be affected by the proposal should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey

results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES.

In order to provide this information there may be a requirement for a survey at a particular time of year. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and where necessary, licensed, consultants. Natural England has adopted standing advice for protected species which includes links to guidance on survey and mitigation.

2.5 Habitats and Species of Principal Importance
The ES should thoroughly assess the impact of the proposals on habitats and/ or species listed as 'Habitats and Species of Principal Importance' within the England Biodiversity List, published under the requirements of S41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the NERC Act 2006 places a general duty on all public authorities, including local planning authorities, to conserve and enhance biodiversity. Further information on this duty is available in the Defra publication 'Guidance for Local Authorities on Implementing the Biodiversity Duty'.

Government Circular 06/2005 states that Biodiversity Action Plan (BAP) species and habitats, 'are capable of being a material consideration...in the making of planning decisions'. Natural England therefore advises that survey, impact assessment and mitigation proposals for Habitats and Species of Principal Importance should be included in the ES. Consideration should also be given to those species and habitats included in the relevant Local BAP.

Natural England advises that a habitat survey (equivalent to Phase 2) is carried out on the site, in order to identify any important habitats present. In addition, ornithological, botanical and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present. The Environmental Statement should include details of:

- Any historical data for the site affected by the proposal (eg from previous surveys);
- Additional surveys carried out as part of this proposal;
- The habitats and species present;
- The status of these habitats and species (eg whether priority species or habitat);
- The direct and indirect effects of the development upon those habitats and species;
- Full details of any mitigation or compensation that might be required.

The development should seek if possible to avoid adverse impact on sensitive areas for wildlife within the site, and if possible provide opportunities for overall wildlife gain.

The record centre for the relevant Local Authorities should be able to provide the relevant information on the location and type of priority habitat for the area under consideration.

2.6 Contacts for Local Records
Natural England does not hold local information on local sites, local landscape character and local or national biodiversity priority habitats and species. We recommend that you seek further information from the appropriate bodies (which may include the local records centre, the local wildlife trust, local geoconservation group or other recording society and a local landscape characterisation document).

For the Local Record Centre (LRC) in Surrey the Surrey Wildlife Trust should be contacted.

3. Designated Landscapes and Landscape Character

Landscape and visual impacts
Natural England would wish to see details of local landscape character areas mapped at a scale appropriate to the development site as well as any relevant management plans or strategies

pertaining to the area. The EIA should include assessments of visual effects on the surrounding area and landscape together with any physical effects of the development, such as changes in topography. The European Landscape Convention places a duty on Local Planning Authorities to consider the impacts of landscape when exercising their functions.

The EIA should include a full assessment of the potential impacts of the development on local landscape character using landscape assessment methodologies. We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character, as detailed proposals are developed.

Natural England supports the publication *Guidelines for Landscape and Visual Impact Assessment*, produced by the Landscape Institute and the Institute of Environmental Assessment and Management in 2013 (3rd edition). The methodology set out is almost universally used for landscape and visual impact assessment.

In order to foster high quality development that respects, maintains, or enhances, local landscape character and distinctiveness, Natural England encourages all new development to consider the character and distinctiveness of the area, with the siting and design of the proposed development reflecting local design characteristics and, wherever possible, using local materials. The Environmental Impact Assessment process should detail the measures to be taken to ensure the building design will be of a high standard, as well as detail of layout alternatives together with justification of the selected option in terms of landscape impact and benefit.

The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping stage would be likely to be a material consideration at the time of determination of the planning application.

The assessment should refer to the relevant National Character Areas which can be found on our website. Links for Landscape Character Assessment at a local level are also available on the same page.

Heritage Landscapes
You should consider whether there is land in the area affected by the development which qualifies for conditional exemption from capital taxes on the grounds of outstanding scenic, scientific or historic interest. These are considered to be designated landscapes of national importance and the impact of the proposal on these should be assessed where appropriate. An up-to-date list may be obtained at www.hmrc.gov.uk/heritage/lbsearch.htm and further information can be found on Natural England's landscape pages here.

4. Access and Recreation
Natural England encourages any proposal to incorporate measures to help encourage people to access the countryside for quiet enjoyment. Measures such as reinstating existing footpaths together with the creation of new footpaths and bridleways are to be encouraged. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Relevant aspects of local authority green infrastructure strategies should be incorporated where appropriate.

Rights of Way, Access land, Coastal access and National Trails
The EIA should consider potential impacts on access land, public open land, rights of way and

coastal access routes in the vicinity of the development. Consideration should also be given to the potential impacts on the adjacent/nearby Click here to enter text. National Trail. The National Trails website www.nationaltrail.co.uk provides information including contact details for the National Trail Officer. Appropriate mitigation measures should be incorporated for any adverse impacts. We also recommend reference to the relevant Right of Way Improvement Plans (ROWIP) to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.

5. Soil and Agricultural Land Quality

Impacts from the development should be considered in light of the Government's policy for the protection of the best and most versatile (BMV) agricultural land as set out in paragraph 112 of the NPPF. We also recommend that soils should be considered under a more general heading of sustainable use of land and the ecosystem services they provide as a natural resource in line with paragraph 109 of the NPPF.

6. Air Quality

Air quality in the UK has improved over recent decades but air pollution remains a significant issue; for example over 97% of sensitive habitat area in England is predicted to exceed the critical loads for ecosystem protection from atmospheric nitrogen deposition (England Biodiversity Strategy, Defra 2011). A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The planning system plays a key role in determining the location of developments which may give rise to pollution, either directly or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water and land. The assessment should take account of the risks of air pollution and how these can be managed or reduced. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System (www.apis.ac.uk). Further information on air pollution modelling and assessment can be found on the Environment Agency website.

7. Climate Change Adaptation

The England Biodiversity Strategy published by Defra establishes principles for the consideration of biodiversity and the effects of climate change. The ES should reflect these principles and identify how the development's effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained. The NPPF requires that the planning system should contribute to the enhancement of the natural environment 'by establishing coherent ecological networks that are more resilient to current and future pressures' (NPPF Para 109), which should be demonstrated through the ES.

8. Cumulative and in-combination effects

A full consideration of the implications of the whole scheme should be included in the ES. All supporting infrastructure should be included within the assessment.

The ES should include an impact assessment to identify, describe and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment, (subject to available information):

a. existing completed projects;
b. approved but uncompleted projects;
c. ongoing activities;
d. plans or projects for which an application has been made and which are under consideration by the consenting authorities, and
e. plans and projects which are reasonably foreseeable, ie projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

9. Ancient Woodland – addition to the S41 NERC Act paragraph

The S41 list includes six priority woodland habitats, which will often be ancient woodland, with all ancient semi-natural woodland in the South East falling into one or more of the six types.

Information about ancient woodland can be found in Natural England's standing advice http://www.naturalengland.org.uk/Images/standing-advice-ancient-woodland_tcm6-32633.pdf.

Ancient woodland is an irreplaceable resource of great importance for its wildlife, its history and the contribution it makes to our diverse landscapes. Local authorities have a vital role in ensuring its conservation, in particular through the planning system. The ES should have regard to the requirements under the NPPF (Para. 118)[2] which states:

'*Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss.*'

Rebecca Brookbank

From: Barker, Francesca (NE) <Francesca.Barker@naturalengland.org.uk>
Sent: 02 December 2014 14:20
To: Charles Collins; Turner, Marc (NE)
Cc: Mike Davies (Davies Landscape Architects); Dan.Knowles@guildford.gov.uk; Paul Sherman; Rebecca Brookbank; mike.murray@causewayland.com; Katherine Munro
Subject: RE: Wisley New Settlement - Natural England

Dear Charlie,

Thank you for your email.

I can agree that your email provides a brief overview of potential mitigation options that we discussed for the Wisley development. However, we are unable to comment on the acceptability of these proposals until they have been assessed under the Habitats Regulations.

I also understand that Becky will be forwarding the notes from the site visit on Friday, which I will review, and then email over any amendments/additions as soon as possible. Again, please note that I will be unable to agree that the mitigation discussed on Friday will not lead to an adverse effect on integrity of Thames Basin Heaths Special Protection Area until it has been tested under the Habitats Regulations.

I hope this email has been of help.

Warmest wishes,

Francesca Barker
Land Use Lead Adviser
Dorset, Hampshire and Isle of Wight Area Team

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If you have just sent me a land use consultation, please resend to consultations@naturalengland.org.uk or, for any other land use query, please contact our Land Use Planning Enquiry line (0300 060 3900) in the first instance.

We are here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.

In an effort to reduce Natural England's carbon footprint, I will, wherever possible, avoid travelling to meetings and attend via audio, video or web conferencing.

Natural England is accredited to the Cabinet Office Customer Service Excellence Standard

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From: Charles Collins [mailto:CCollins@savills.com]
Sent: 25 November 2014 17:14
To: Turner, Marc (NE); Barker, Francesca (NE)
Cc: Mike Davies (Davies Landscape Architects); Dan.Knowles@guildford.gov.uk; 'Paul Sherman': (rebeccabrookbank@epr.uk.com); 'mike.murray@causewayland.com'; Katherine Munro
Subject: Wisley New Settlement - Natural England

Francesca, Mark

Wisley New Settlement - Natural England

I thought it helpful to outline the substantive matters agreed last Friday. We are meeting GBC again this Thursday.

Subject to your review of detail we have provisionally agreed:

- SANG at 10 ha per 1,000 population standard
- SAMM contribution (based on the standard)
- A 'SAMM PLUS' strategy

The SAMM PLUS strategy will inform the Section 106 and contain:

- A SANG strategy relating to circa 50ha of SANG, based on the standard agreed, and landscape design
- Adoption or management of the SANGs via either a Community land trust, adoption by SCC or Surrey Wildlife Trust or a management company
- Access Management Strategy (AMS) which in incorporates a number of highways, education, site wardening and pedestrian and cycle measures (references to the Wisley & Ockham Walk Way ("WOW"))
- Landscape Ecological Management Plan (LEMP) covering non SANG related on-site matters

The above shall be explained identified within a Framework SANG Strategy, to be submitted with the application. The illustrative landscape designs shall be included in the indicative D&AS and landscape masterplan.

To be clear, we now no longer propose any rights of way diversions or stopping up.

Soon in the New Year an Information for Habitats Regulations Assessment will be shared, together with further detail on the SANG strategy. We will agree with GBC as part of the 30 week determination, a longer time period for you to comment on the application. I will discuss this with GBC on Thursday.

I hope this clarifies matters, and I know that Mikes Davies and Mike Murray are looking forward to seeing you on Friday on site, and that we anticipate Rebecca Brookbank also being available for the meeting (I have copied her).

I have also copied Paul and Dan from GBC.

Regards,

Charlie

Charlie Collins MSc MRTPI
Associate Director
Planning

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Ecological Planning & Research
[illegible]
TEL: 01962 794720 FAX: 01962 794721
e-mail: [illegible] website: [illegible]

Wisley Airfield, Surrey, Site Walkover Notes, 28th November 2014;

Agreed by Natural England on 10th December 2014.

Attendees:
Francesca Barker – Land Use Lead Advisor Natural England
Pippa Langford – Senior Access Advisor Natural England
Graham Steven – SSSI Officer Natural England
Paul Sherman – Planning Case Officer for Wisley – Guildford BC
Sally Astels – Parks and Countryside officer – GBC
Claire Saunders – Senior Countryside Access Officer SCC
Luke Dawson – Countryside Access Officer SCC
Mike Murray – Causeway Land for Wisley Property Investments
Mike Davies – Davies Landscape Architects
Rebecca Brookbank - EPR

➔ ***Car Park Introduction***

Introduction of the Masterplan (MM & MD)

- Over 50% of site dedicated to green infrastructure
- Phased west to east
- Haul road will run through the north of the SANG until phase 4 when it will be converted to SANG
- Western edge is used by bats – MUGA lighting, controlled to 2 lux.
- Bund to attenuate noise / protect visual amenity – elevated walkway on top crossing access road by feature footbridge
- Elm Lane – through-access for vehicles to A3 to be closed.
- Existing resident access re-routed through SANG site
- Traveller site surrounded by bank / "tail" of tump and planting, much of which is existing
- Tump to be created to form feature views, balance cut and fill, DDA compliant footpath to top.
- Successful appeal for composting site implemented –modelled landscape and visual impacts for this scheme.
- Site broken up by GI – 4 smaller villages – green fingers providing north/south links for wildlife (defending against future effects of climate change and habitat isolation) – traffic narrowing and calming at 2 corridors (20 mph).
- 4 PROW transecting site N/S: Wisley RHS, Snakes Field, Elm Corner, Old Lane

Introduction of the SANG (MM & MD)

- Midpoint widened to 75m to respond to Francesca's comment, although 100m was advised by NE as the offset.
- Cater for new residents and provide unique resource for existing residents.
- 2.3 km walk in Phase 1, from car park (SANG link length discounted).
- 5km+ in full operation.
- 1.7km in southern block.
- Woodland, meadow, orchard habitats.
- Landforms used to provide visual separation.
- Southern edge site proposed as supporting POS– wild foraging corridor.

Introduction of Highways Measures (MM & MD)

- No proposal to divert PRoW.
- Old Lane south of Boulder Mere Car park, north of Pond car park restricted to one way– southern car park effectively blocked off from north. Access from south limited by proposed road closures at Ockham Lane and Plough Lane.
- NE SSSI officer pleased about control along this route, although stated that southern car park is quieter than northern car park and safer for dogs.
- Southern car park restriction popular with SCC and police due to antisocial behaviour.
- Traffic block also proposed on Ockham Lane – traffic north/south (2-way block).
- Third block proposed on Plough Lane – will stop rat running to Cobham. Old Lane will become very quiet – won't be directly accessible from Ockham, A3 or Cobham (2-way block).
- A3, functional improvements not believed to encroach on SSSI land.

Introduction of the WOW (MM & MD)

- 10 km route to provide 'family friendly cycling'.
- Taking in range of habitats.
- Other features: semaphore tower, RHS Wisley (incl. café).
- Existing bridleway on much of route– horse use not to be restricted.
- Surface upgrades proposed.
- Q code and telephone number code – Linked to website / app to download route / get info on points of interest.

Dealing with the SANG Pinchpoint (MD)

- Landform to separate east / west routes.
- 75m from edge of SANG to edge of urban realm (which inclides planting – not edge of housing).
- Landforms through site, so not odd feature.
- Pinchpoint not included in 2.3km circular walk.

NE concerns about SANG (FB) (pre site visit)

- Separation of southern block.
- Urban feel.
- Road through to adjacent housing (following Highway measures above).
- Traveller site – urban influence.
- SANG needs to be semi-natural– want wild feel, no manmade features.
- SANG narrow across width; concerned people would want to get away from houses – so get into car and turn left out of development to SPA.

- Limited time available to have input into design.
- As next to SPA, has to work from start to get behaviour of new residents right.
- Habitat creation in advance – mature SANG with instant impact from 1st occupation.
- Dilly Lane SANG habitat creation now maturing, can look at timeline for establishment & outcomes from monitoring (RB).

➔ ***Site Visit***

Management of Wisley and Ockham Common (GS)

- SWT took over in 2002.
- Was under Countryside Stewardship then Higher Level Stewardship.
- Tree clearance 2002-2010.
- Annex 1 Bird numbers have increased following tree clearance (approximate numbers cited by GS, although definitive bird survey data to be obtained from 2 J's).
    - All 3 species.
    - 7 pairs Nightjar.
    - 4-6 pairs Woodlark.
    - 4-5 Dartford Warbler.

Hatchford Wood on the WOW

- Owned by SCC.
- Not SPA.
- Signage indicates route to Ockham Common.
- Footpath improvement proposed.
    - Surfacing – pH neutral, no weeds, still soft, permeable surfaces, drain, self-binding.
    - Look at surfacing with SCC and NE.
    - Remove existing muddy layer.
    - Looks natural and in-keeping.
    - Proposals look suitable (GS).
- NE – option for signposted route around wood to keep people out of SPA and funnel them back to the development? (FB/PW)
- Need focus on shorter targeted dog walking routes (FB).
- Semaphore tower access – promote existing picnic site? (RB).
- SSSI features on other side of M25 and A3 less sensitive (GS).
- Useful resource, Surrey Wildlife Trust Management Plan, especially Fig. 6 & 7.
- NE have concerns over the proposed WOW route where it approaches the SPA, and therefore advise that the WOW is diverted away from this junction and through the woods directly to the Semaphore tower.

Visitor Survey

- FB recalled that postcodes from car park originate from north of A3/M25, although definitive survey data will need to be reviewed.
- Block access from A3 to café/car park, would lower baseline of pressure , but SWT contractual position may be problematic. MFM noted provision for café / visitor centre in village centre adjacent to SANG.

Snakes Field

- Managed by SWT – Gemma Grant, warden.
- Existing wildlife interest will colonise SANG- obtain info/management plan?

- Avenue funnels people into SPA (PW)
    - Redirect around edge of field?
    - Thin more obvious trees on entrance to avenue from Wisley Airfield?
- Green hay for SANG?
- Landscape plan for Snakes Field to complement access management strategy?
- Commitment to enhance for biodiversity, potential conflict with use for recreation? (GS)
- Notes snakes field represented compensation for loss of SPA from M25, should be publically accessible, access should not preclude biodiversity objectives (PW).

Features in SANG (FB)

- Rustic seating ok.
- No trim trail.
- Bird hide – move to outdoor classroom/café area.
- Bee hive area - move to southern "fruit boundary"
- PROW – don't surface treat at all, although keep trees out as need to keep clear, support for strategy of strategic planting and features to reduce obvious desire line
- Make E-W SANG paths more prominent than PROW.
- Need circular walk in SW SANG block
- Existing PROW – need agreement from SCC on any change in treatment/ management/surfacing.
- Check no hydrological change to SPA
- Southern SANG block
    - Needs to be accessible – access to river
    - Paths raised so don't flood – boggy ground, consider surface type.
    - Bridge over river to access other side – 2 ideal.
    - EA permit may be needed – ok so long as flood risk ok.
    - FB → not primary SANG route, so if floods part of year and inaccessible not major problem.
    - Footpath along top of bank in Southern SANG out of boggy area – look at drainage options?
- 1 space per ha of SANG required (48) for car park
    - 100 proposed, to be shared with school and village centre
    - 30 spaces to be reserved for SANG in some way?

Further Discussion about Built Development (MM & MD)

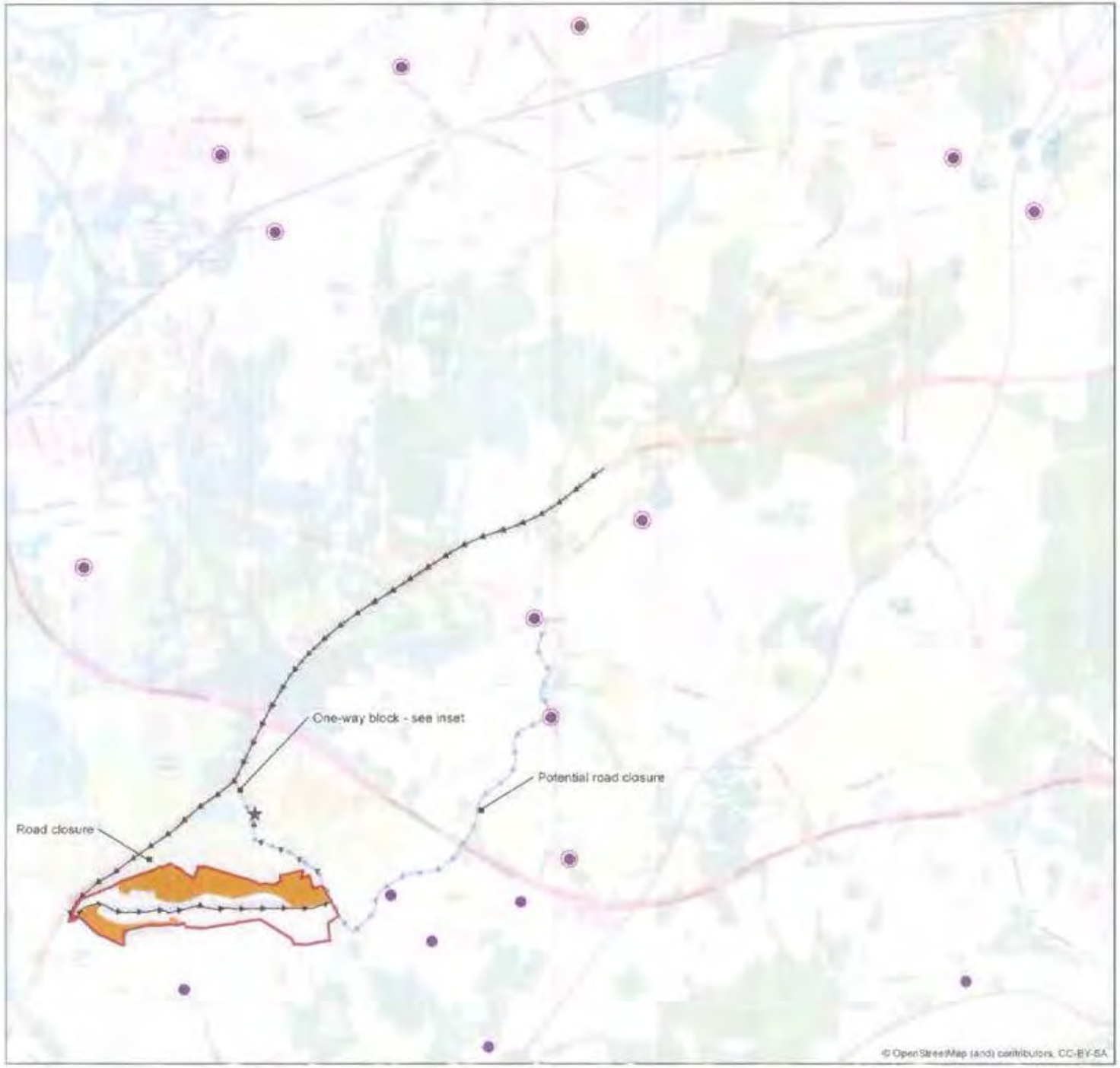
- Tump – up to 32m high – will be views.
- Drone images (360°) to go with application supporting documentation to follow submission.
- Screening houses from SANG required:
    - At edge, some houses, say 2-3 storey.
    - Some townhouses, say 3-4 storey.
- Bound track to Elm Lane residents.
    - Explore 20 mph limit.
    - Away from main walk.
    - Dog safety to be considered.
    - Track running as close as possible to retained woodland.
- Sports pitches won't be obvious from SANG.
- SNCI disturbed as little as possible.
    - Carry out restoration to maximise value of SANG habitats.

Options for SPA Access Management

- Onsite access management and/or instead of WOW?
    - Redirecting new users to less sensitive parts of SPA through footpaths signage, wardening and leaflets? SWT leaflet. Way-marked trail to semaphore tower goes through sensitive heathland area. Change route – new users want to follow marked trail, so don't get lost. (PL)
    - East of SPA owned by SCC, not CROW Act, if ***dedicated as open access land***, can control dog use with education programme/leaflets. Would require dogs on a lead during bird nesting period. Complement with wardening/leaflets to direct dog off leading walking to SANG.
    - Possible dog control order – needs consultation, may not be required if open access land dedication can implement seasonal "dogs on leads" requirements.
    - Kennel club- risk of objection.
- Warden role
    - Ongoing review of soft access management measures.
    - Habitat management.
    - Public liaison.
    - Signage.
    - Dog off lead route to focus access.
    - Education – info leaflets and signs.
    - SSSI officer- Queenham Common – fingerposts used to identify sensitive areas, has been effective.

EPR/RB/10.12.14

Appendix 3
Proposed Highway Improvements



MAP A3 Viable Travel Routes to Access Point 5

KEY

- Site boundary
- SANG boundary
- Access point 5
- Visitor to access point 5
- Visitors to access point 5 that are likely to be captured by Wisley SANG
- Visible travel routes to access point 5 prior to road closures
- Viable travel route to access point 5 after road closures

Inset - Old Lane road block

SCALE 1:35,000 at A3

0 500 1,000 1,500 2,000 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments

PROJECT: Wisley Airfield

DATE: October 2015

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Appendix 4
Details of International Sites

COUNTY: SURREY SITE NAME: OCKHAM AND WISLEY COMMONS

BOROUGHS: ELMBRIDGE, GUILDFORD

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981.

Local Planning Authorities: ELMBRIDGE BOROUGH COUNCIL, Guildford Borough Council

National Grid References: TQ 070585, TQ 082585 TQ 084592, TQ 078595 — Area: 269.6 (ha.) 666.2 (ac.)

Ordnance Survey Sheet 1:50,000: 187 — 1:10,000: TQ 05 NE

Date Notified (Under 1949 Act.): 1975 — Date of Last Revision: –

Date Notified (Under 1981 Act): 1986 — Date of Last Revision: –

Other Information:
The majority of Ockham & Wisley Commons SSSI is owned and managed by Surrey County Council as an Open Space. The site includes several areas of Common Land. The boundary of the site has been modified at renotification by several deletions and extensions. The lakes at Pains Hill and Silvermere are no longer part of this site.

Reasons for Notification:
This site consists of a large tract of heathland lying between the Mole and Wey Rivers near Cobham, containing areas of heath, bog, open water, secondary woodland and scrub. This variety of habitats supports a rich community of heathland plants and animals, including a large number of rare and local insects.

Lowland heaths have been a feature of the British landscape for several thousand years, but the area of heathland has been reduced steadily by land-use changes such as conversion to intensive agriculture, forestry or urban development. This loss has been particularly rapid this century, and 40% of heathland remaining in 1950 has now been destroyed. As their habitat is destroyed, the many specialised plants and animals which live on heathland have become increasingly rare. Since little heathland is still maintained by grazing, much of it is becoming overgrown with scrub and trees, a process which may be seen clearly at this site.

The site lies on Bagshot beds, which give rise to an acidic sandy soil supporting heath dominated by ling *Calluna vulgaris* and bell heather *Erica cinerea*, and in grassy areas by common bent grass *Agrostis capillaris* and wavy hair-grass *Deschampsia flexuosa*. Amongst these plants grow dwarf furze *Ulex minor*, petty whin *Genista anglica* and shepherd's cress *Teesdalia nudicaulis*. Animals found here include such local insects as the silver-studded blue butterfly *Plebejus argus* and the wood tiger beetle *Cicindela sylvatica*. In wet areas, where the sand is overlain by peat, the heath is dominated by ling, cross-leaved heath *Erica tetralix*, purple moor-grass *Molinia caerulea*, tufted hair-grass *Deschampsia cespitosa* and bog-moss *Sphagnum* spp. Also found here are royal fern

Osmunda regalis, lesser skullcap *Scutellaria minor*, meadow thistle *Cirsium dissectum* and creeping willow *Salix repens*, and the largest Surrey colonies of bog hairgrass *Deschampsia setacea* which is local in Britain and rare in Europe as a whole. Among the many local insects found here are bog bush-cricket *Metrioptera brachyptera* and a large robber fly *Asilus crabroniformis*.

Most of the heathland is very overgrown with bracken *Pteridium aquilinum* and invasive trees and shrubs; mainly silver birch *Betula pendula*, Scot's pine *Pinus sylvestris* and oak *Quercus robur*. In several parts of the site there are dense pine plantations which have replaced the heathland completely.

There are several areas of open water within the site, including Bolder Mere and a number of ponds and pools in the wet heathland. Plants growing around the water include several Surrey rarities including shoreweed *Littorella uniflora*, marsh St John's wort *Hypericum elodes* and lesser water-plantain *Baldellia ranunculoides*. Locally-distributed plants include needle spike-rush *Eleocharis acicularis* and pillwort *Pilularia globulifera*. Open water surrounded by heathland presents an ideal habitat for many dragonflies and damselflies (Odonata), and over 20 species have been recorded from the site which is thus of national importance for this group. They include the rare white-faced dragonfly *Leucorrhinia dubia*, the local hairy dragonfly *Brachytron pratense* and the ruddy darter *Sympetrum sanguineum*. The site also supports many other local and rare invertebrates. It is of national importance for true flies (Diptera); rare species include a bee fly *Thyridanthrax fenestratus* and a crane-fly *Tipula livida*, while the crane-fly *Limonia inusta* is among the many local species. A large number of local beetles (Coleoptera) are also found, including the ground beetle *Amara infima* and the weevil *Byctiscus populi*.

NATURA 2000

STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)
FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE (SCI)
AND
FOR SPECIAL AREAS OF CONSERVATION (SAC)

1. Site identification:

1.1 Type J

1.2 Site code UK9012141

1.3 Compilation date 200503

1.4 Update

1.5 Relationship with other Natura 2000 sites

U	K	0	0	1	2	7	9	3

1.6 Respondent(s) International Designations, JNCC, Peterborough

1.7 Site name Thames Basin Heaths

1.8 Site indication and designation classification dates

date site proposed as eligible as SCI	
date confirmed as SCI	
date site classified as SPA	200503
date site designated as SAC	

2. Site location:

2.1 Site centre location

longitude	latitude
00 44 18 W	51 22 18 N

2.2 Site area (ha) 8274.72

2.3 Site length (km)

2.5 Administrative region

NUTS code	Region name	% cover
UK521	Berkshire	16.10%
UK561	Hampshire	30.65%
UK532	Surrey	53.25%

2.6 Biogeographic region

Alpine	Atlantic	Boreal	Continental	Macaronesia	Mediterranean
	X				

3. Ecological information:

3.1 Annex I habitats

Habitat types present on the site and the site assessment for them:

Annex I habitat	% cover	Representativity	Relative surface	Conservation status	Global assessment

3.2 Annex I birds and regularly occurring migratory birds not listed on Annex I

		Population				Site assessment			
		Resident	Migratory						
Code	Species name		Breed	Winter	Stage	Population	Conservation	Isolation	Global
A224	*Caprimulgus europaeus*		264 M			B		C	
A246	*Lullula arborea*		149 P			B		C	
A302	*Sylvia undata*		445 P			A		C	

4. Site description:

4.1 General site character

Habitat classes	% cover
Marine areas. Sea inlets	
Tidal rivers. Estuaries. Mud flats. Sand flats. Lagoons (including saltwork basins)	
Salt marshes. Salt pastures. Salt steppes	
Coastal sand dunes. Sand beaches. Machair	
Shingle. Sea cliffs. Islets	
Inland water bodies (standing water, running water)	0.6
Bogs. Marshes. Water fringed vegetation. Fens	4.9
Heath. Scrub. Maquis and garrigue. Phygrana	44.0
Dry grassland. Steppes	
Humid grassland. Mesophile grassland	
Alpine and sub-alpine grassland	
Improved grassland	
Other arable land	
Broad-leaved deciduous woodland	7.0
Coniferous woodland	34.2
Evergreen woodland	
Mixed woodland	3.6
Non-forest areas cultivated with woody plants (including orchards, groves, vineyards, dehesas)	
Inland rocks. Screes. Sands. Permanent snow and ice	
Other land (including towns, villages, roads, waste places, mines, industrial sites)	5.7
Total habitat cover	**100%**

4.1 Other site characteristics

Soil & geology:

Acidic. Alluvium. Clay. Nutrient-poor. Sand. Sedimentary

Geomorphology & landscape:

Lowland

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC)

During the breeding season the area regularly supports:

Caprimulgus europaeus	7.8% of the GB breeding population Count mean (RSPB 1998-99)
Lullula arborea	9.9% of the GB breeding population Count as at 1997 (Wotton & Gillings 2000)
Sylvia undata	27.8% of the GB breeding population Count as at 1999 (RSPB)

ARTICLE 4.2 QUALIFICATION (79/409/EEC)

4.3 Vulnerability

The mosaic of habitats which form the internationally important lowland heathland are dependent on active heathland management. Lack of grazing and other traditional management practices therefore pose a threat. Traditional management is being implemented through schemes such as Countryside Stewardship and Wildlife Enhancement Scheme. Development pressure on neighbouring land and the cumulative and indirect effects of neighbouring developments also pose a potential long-term problem. Housing developments are particularly relevant in this part of south-east England. This has been addressed through English Nature commenting on planning applications and providing input to structural and local plans. A strategic approach to accommodating development whilst ensuring compatibility with the Habitats Regulations is being addressed through the Thames Basin Heaths Area Based Delivery Project.

Tenure is a mixture of public bodies, private landowners, local authorities and non-governmental organisations. The Ministry of Defence are significant landowners/managers. At present the MoD land is used principally for firing ranges and military exercises (predominantly on foot). A significant proportion of the site is local authority-owned land. The local authority land is often designated as Public Open Space and is heavily used for informal recreation. For the smaller private ownerships, conservation management has been addressed through the Site Management Statement process.

5. Site protection status and relation with CORINE biotopes:

5.1 Designation types at national and regional level

Code	% cover
UK01 (NNR)	6.5
UK04 (SSSI/ASSI)	100.0

European Site Conservation Objectives for Thames Basin Heaths Special Protection Area Site Code: UK9012141

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

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.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

A224 *Caprimulgus europaeus*; European nightjar (Breeding)
A246 *Lullula arborea*; Woodlark (Breeding)
A302 *Sylvia undata*; Dartford warbler (Breeding)

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations") and Article 6(3) of the Habitats Directive. They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where this is available) will also provide a framework to inform the management of the European Site under the provisions of Articles 4(1) and 4(2) of the Wild Birds Directive, and the prevention of deterioration of habitats and significant disturbance of its qualifying features required under Article 6(2) of the Habitats Directive.

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

Publication date: 30 June 2014 (Version 2). This document updates and replaces an earlier version dated 29 May 2012 to reflect Natural England's Strategic Standard on European Site Conservation Objectives 2014. Previous references to additional features identified in the 2001 UK SPA Review have also been removed.

Appendix 5
Visitor Questionnaire Survey Methodology and Results

Visitor Questionnaire Survey Methodology and Results

1.0 INTRODUCTION

1.1 Development is proposed at Wisley Airfield in Surrey by Wisley Property Investments Ltd. The site falls within 5km of Wisley & Ockham Commons Site of Special Scientific Interest (SSSI) a component patch of the Thames Basin Heaths Special Protection Area (SPA). The Thames Basin Heaths SPA support Internationally important populations of rare ground-nesting bird species: Woodlark *Lullula arborea*, Nightjar *Caprimulgus europeaus* and Dartford Warbler *Sylvia uridata*. These species are vulnerable to disturbance resulting from recreational use of the heaths, particularly by walkers with free-roaming dogs.

1.2 Ecological Planning & Research Ltd. (EPR) are therefore compiling information to assist the Competent Authority in undertaking a Habitats Regulations Assessment (HRA), including more detailed design information regarding the primary impact avoidance measure for the scheme- Suitable Alternative Natural Greenspace (SANG).

1.3 In order to understand whether a SANG at Wisley Airfield is likely to attract residents from new housing, or residents from existing housing in the nearby area, information on the patterns of visitor access to the European sites in question, and other greenspaces in the local area is required.

1.4 A visitor questionnaire survey of Ockham Common, the closest part of the SSSI to the proposed development site, was therefore undertaken to obtain fully up to date and site-specific quantitative and qualitative information regarding the current patterns of visitor access. Results will be compared to existing visitor survey information for this part of the SPA collected by Liley et al. (2005), Fearnley & Liley (2012), and ecology Solutions (2014).

2.0 VISITOR SURVEY METHODOLOGY

Background to Methodology

2.1 Questionnaire survey methodology followed the methodology developed from research on recreational impacts to heathland sites within the Thames Basin Heaths (Liley et al. 2005). This methodology is now widely used, such that data collected from different studies can be readily compared.

2.2 A range of standard questions were included within the questionnaire, including:

- Numbers of visitors and dogs to the site;
- Whether they are local residents;
- Where they have come from;
- How often they visit;
- Method of travel;
- How long is spent on site;
- Where they went on site;

- Activity on site;
- What they feel are the key features of the site; and
- Whether they visit other sites in the area and;
- Similar topics as above relating to alternative sites.

2.3 Four access points were selected for survey: the two main vehicular access points at Boldermere and Pond car park, and two pedestrian access points at Hatchford End and Hatchford Wood which connect to residential areas to the south of the site.

2.4 The survey approach and questionnaire were designed by EPR, and all survey work was carried out by Marketing Means, an independent market research company.

2.5 All survey work involved structured liaison with interviewee(s), utilising a standard set of questions (**Annex 1**). Maps were used to aid interviews and to ensure robust data was obtained. Visitors were asked to annotate on a map the route they have taken during their visit, which allowed subsequent analysis of recreational pressure.

Survey Effort and Timing

2.6 Visitors were interviewed as they exited through the access points in order to obtain information about the completed visit, however counts of people and dogs entering and exiting were also taken to obtain information on total visitation to the site. Groups of people were counted as one, with only one person interviewed per group. Children appearing under the age of 16 were not approached if alone.

2.7 The timing of surveys followed the methodology of Liley et al. (2005).

Morning Survey Work =	07:00-09:00 and 10:00-12:00
Afternoon Survey Work =	13:00-15:00 and 17:00-19:00

2.8 Survey work was completed between Friday 3rd July and Monday 6th July, with 4 two-hour surveys per day (as detailed above) completed at access points 1,2 and 3 on the Friday and Saturday and another 4 two-hour surveys completed per day at access point 4 on Sunday and Monday.

3.0 VISITOR SURVEY RESULTS

3.1 **Table A1** below provides a summary of the most common responses given during the interviews, to give an indication of the typical patterns of recreation within these open spaces local to Wisley. The weather was very fair for the survey period, with 91 surveys carried out in sunshine and 3 surveys carried out in cloudy weather conditions.

Table A1: *Visitor Survey Results Summary*

Question	Answer summaries
1. How many adults and children are present in your group, including yourself?	Children 7 Adults 133 (100 aged 19-59 and 33 aged 60+)
2. How many dogs have you taken for this visit?	111 total dogs (90% of visitors had dogs, 66% had 1 dog, 21% had 2 dogs)
3. How did you get to this site today?	Car/Van (91%)
4. Is this your normal mode of transport?	Yes (100%)
5. Can you give the postcode of where you travelled from to visit this site?	Used to calculate visitor origins and travel distance
6. Are you a local resident, day visitor, overnight visitor, other?	Local Resident (71%)
7. What activity did you take part in?	Dog Walking (89%)
8. How often do you visit this site?	Once weekly (23%) 2/3 times per week (22%) Occasionally/sporadically (16%) Daily (15%)
9. What time of day, if any, do you normally visit the site?	Before 9am (28%) No particular time (24%) Between 9am and 12noon (17%)

Question	Answer summaries
10. What time of year, if any, do you normally visit the site?	All times of year (51%) Summer (40%)
11. Do you always use this access point?	Yes (86%)
12. Where did you go when you were on the site? (average, maximum and minimum distances calculated from mapped routes)	Average 2.9km, Maximum 4.6km Minimum 0.7km
13. Did anything influence the route you took?	Weather (37%) Time available (36%)
14. Was your route today similar to other visits?	Yes (89%)
15. How long were you on this site for?	30 mins to 1 hour (65%)
16. If you have a dog/s, was it/ were they let off the lead?	Yes (83%)
17. Did you or your dogs go off the main footpaths?	People: mostly on main footpaths (73%) People: mostly off main footpaths (16%) Dogs: mostly on main footpaths (36%) Dogs: mostly off main footpaths (25%)
18. What features draw you to this site?	Ability to let dog off lead (56%) Good car parking (54%) It's close to where I live (44%)

Question	Answer summaries
	Length and variety of paths/tracks (36%) Look and feel of the site (32%)
19. Do you visit any other open spaces for the same recreational purpose?	Yes (53%) No (45%)
20. If yes, could you tell us the name of the *main alternative sites (max 3)* you visit, with a description of their location if not shown on map?	Bookham Common (6%) Esher Common (6%) Sheepleas (North Downs) (6%)
21. How often do you tend to visit these sites?	2/3 times week (28%) Monthly (26%)
22. How do you usually get there?	Car/van (94%)
23. How would you prefer to get there?	Car/van (90%)
24. What are your reasons for choosing this alternative site?	Makes a change/for variety (30%) More convenient/it's closer (26%) Good car parking (20%) Ability to let dog off lead (16%)
25. Would you use new open spaces if they were provided in the local area?	Yes (53%) Yes, but only if: - dog friendly (13%)

Question	Answer summaries
	- had parking (13%) - it had the right features/character (8%) - close to home (7%) - large and open (5%) No (1%)

Annex 1

Visitor Survey Questionnaire

OCKHAM COMMON RECREATION STUDY

"Hello. I am carrying out a survey to find out about local patterns of recreation. I would be grateful if you could spare a few minutes to answer some multiple choice questions....."

Access point:	Date:

Time?

Circle ONE only

7-9am	01
10-12noon	02
1-3pm	03
5-7pm	04

Weather conditions?

Circle ONE only

Sunshine and hot	01
Sunshine and showers	02
Cloudy	03
Cloud and showers	04
Heavy rain	05
Other (please specify)	06

[If interviewee is in a rush/will only answer a few questions, get answers to Qs with *.]

* **Q1.** How many people are present in your group, including yourself?

Give number of each age group

0-18	
19-59	
60+	

* **Q2**. How many dogs have you taken for this visit?

If none, mark 0

Number =	

Q3. How did you get to this site today?

Circle ONE only

Walk	01
Car/van	02
Bus/coach	03
Bicycle	04
Motorbike	05
Horse	06
Other – specify:	07

Q4. How do you usually get to this site?

Circle ONE only

Walk	01
Car/van	02
Bus/coach	03
Bicycle	04
Motorbike	05
Horse	06
Other – specify:	07
First visit	08

* **Q5.** Can you give the postcode of where you travelled from to visit this site? *[this is one of the most important parts of the questionnaire, please make every effort to obtain and write down accurately and clearly- a postcode does not allow individual houses to be identified and postcodes will not be passed on to third parties]*

Postcode	
No postcode but precise location/road name is	

* **Q6**. Are you...?

Circle ONE only

A local resident	01
A day visitor	02
An overnight/multiple night stay visitor	03
A professional dog walker	04
Other, specify:	05

* **Q7.** What activity did you take part in?

Circle those which apply the MOST

Dog walking	01
Walking	02
Bird watching/wildlife	03
Jogging/exercise	04
Horse riding	05
Cycling	06
Picnic	07
Visiting the cafe	08
Other- specify:	09

* **Q8**. How often do you visit this site?

Circle ONE only – choose closest answer

Daily	01
Two-three times a week	02
Once weekly	03
Two-three times a month	04
Once a month	05
Occasionally/sporadically	06
First visit	07 *skip to Q12*

Q9. What time of day, if any, do you normally visit for informal recreation?

Circle ONE only

Before 9am	01
Between 9am and 12noon	02
Between 12 and 2pm	03
Between 3 and 5pm	04
After 5pm	05
No particular time/varies	06

Q10. What time of year, if any, do you normally visit?

Circle ANY that apply (if circle 05, don't circle any others)

Winter –(Dec, Jan, Feb)	01
Spring – (March, April, May)	02
Summer – (June, July, Aug)	03

Autumn – (Sept, Oct, Nov)	04
Or . All times of year	05

Q11. Do you always use this access point at the start of your visit?

Circle ONE only

Yes	01
No	02
Not a regular visitor	03

* **Q12.** Where did you go during your visit? –

Draw neat path with arrows on MAP, mark START and FINISH points

Q13. Did anything influence the route you took today?

Circle ONE only

Weather	01
Time available	02
Muddy tracks/paths	03
Followed marked trail	04
Interest/focal features	05
Other people: took route towards other people	06
Other people: took route away from other people	07
Other: (specify below)	08

Q14. Was your route today similar to other visits?

Yes	01
No, longer than normal	02
No, shorter than normal	03
Route varies on each visit	04

Q15. How long was your visit?

Circle ONE only

Less than 30 mins	01
30 mins – 1 hour	02
Over an hour	03

Q16. If you have a dog/s, was it/ were they let off the lead?

Circle ONE only

Yes	01
No	02
Don't have dogs	03

Q17. Did you (and/or people/dogs with you) go off the main footpaths during your visit today, or did you stay on them all the time?

Circle ANY that apply

People: mostly on main footpaths	01
People: mostly off main footpaths	02
People: more or less equal	03
Dog/s: mostly on main footpaths	04
Dog/s: mostly off main footpaths	05
Dog/s: more or less equal	06

* **Q18**. What features draw you to this site?

Circle those that MOST apply

Ability to let dog off the lead	01
It's close to where I live (easy to reach)	02
Good car parking close by	03
The look and feel of this site	04
Length & variety of tracks/paths available	05
Range of habitats & landscapes (variation in countryside e.g. grassland, woodland etc.)	06
Dry, well maintained paths	07
Diversity of wildlife	08
Signs or information boards giving an explanation of features of interest	09
Well placed seating	10
Clearly marked routes	11
Café/pub nearby	12
Peacefulness	13
Feel safe	14
Other (specify below):	15

* **Q19.** Do you visit any other open spaces regularly for the same purpose?

Circle ONE only

Yes	01
No	02
Don't know	03

Q20. If *yes*, could you tell us the name of the **main alternative sites (max 3)** you visit, with a description of their location?

1.....

2.....

3.....

Q21. How often do you tend to visit these sites? (if varies state for *main* alternative site)

Circle ONE only – choose closest answer

Daily	01
Two-three times a week	02
Once weekly	03
Monthly	04
Occasionally/sporadically	05

Q22. How do you usually travel to these sites?

Circle ONE only

Walk	01
Car/van	02
Bus/coach	03
Bicycle	04
Motorbike	05
Horse	06
Other – specify:	07

Q23. What is your preferred method of travel?

Circle ONE only

Walk	01
Car/van	02

Bus/coach	03
Bicycle	04
Motorbike	05
Horse	06
Other – specify:	07

* **Q24**. What makes you visit other sites instead of this site?

Circle those that MOST apply

Makes a change/for variety	01
More convenient/it's close to where I live/easy to reach	02
Good car parking	03
Ability to let dog off the lead	04
Dog friendly	05
The look and feel	06
Length & variety of tracks/paths available	07
Range of habitats & landscapes (variation in countryside e.g. grassland, woodland etc.)	08
Dry, well maintained paths	09
Diversity of wildlife	10
Signs or information boards giving an explanation of features of interest	11
Well placed seating	12
Clearly marked routes	13
No urban intrusion	14
Peacefulness	15
Feel safe	16
Other (specify below):	17
Don't visit other sites	18

*** Q25. Would you visit new open spaces if they were provided in the local area?**

Yes	01
Yes, but only if close to home	02
Yes, but only if it had parking	03

Yes, but only if large and open	04
Yes, but only if dog friendly	05
Yes, but only if it had the right features/character	06
No	07
Other comments:	08

Appendix 6
Predicted HGV Movements during Construction

Table A6 below provides further information regarding the number of predicted HGV movements on and offsite during construction, based on the build rate reported in the ES and likely construction traffic. This information has been collated by WSP, with amendments made by EPR to reflect changes in SANG design and delivery.

Table A6: Predicted HGV movements per day on and offsite during construction

On/Offsite	*Year*	*Housing Delivery (incl. C2 Uses)*[1]	*Cum. Min. SANG Requirement (ha)*[2] *(excl. C2 Uses)*	*SANG Phase*	*Cum. SANG Area Delivered (ha)*	*HGV traffic (two-way) per day*[3]	
						West of Elm Corner[4]	*East of Elm Corner*[4]
Onsite	2016/2018	-	-	Phase 1 (first occupation 2018)	38.7	60	60
	2018/2019	75	1.8			38	38
	2019/2020	135	5.0			38	38
	2020/2021	167	9.0			38	38
	2021/2022	220	14.3			32	16
	2022/2023	158	18.1			32	16
	2023/2024	205	23.0			22	12
	2024/2025	224	28.4			22	12
	2025/2026	209	33.4	Phase 2		22	12
	2026/2027	181	37.8	Phase 3	40.8	22	12
	2027/2028	208	42.8		49.2	22	6
	2028/2029	134	46.0	Phase 4	49.9	22	6
	2029/2030	152	49.6			22	6
Typical off-site	2016-2030					**16**	**16**

[1] From Wisley Airfield Planning Statement.

[2] Based on provision rate of 10.35ha/1,000 standard, before SANG discounting.

[3] Section 14.4 of the Wisley Airfield Environmental Statement.

[4] Predicted movements west and east of a hypothetical vertical axis taken through Elm Corner, to indicate the variations in HGV movements in the eastern and western parts of the site during construction. Point of exit from the site will be influenced by the construction phase.

Appendix 7
SANG Habitat Creation: Methods and Timescales

SANG Habitat Creation: Methods and Timescales

1. Introduction

1.1 This note sets out evidence regarding the methodologies and timescales involved in creating semi-natural habitats of the type that are proposed in the Wisley Airfield SANG, to demonstrate that suitably mature and attractive habitats can be created within the proposed timeframe of two growing seasons prior to first occupation.

1.2 Since mature woody stock can be purchased and planted on site (with stock specifications agreed with GBC and NE), the main factor limiting the timescales within which an acceptably mature and attractive SANG can be created is the time required to create new semi-natural wildflower grassland on ex-arable habitat. The information provided below therefore focusses on methods and timescales for grassland creation.

1.3 This evidence has been compiled in response to Natural England's request for further information during pre-application consultations.

2. Objectives for Grassland Creation & Published Information Regarding Timescales

2.1 In terms of objectives for creating a suitably mature grassland to support an effective SANG, the grassland sward would need to be suitably established to withstand trampling and erosion and would need to have a predominance of flowering plants and minor presence of undesirable weeds (such as creeping thistle, ragwort, dock) to provide an attractive appearance and a sward that people and dogs can happily walk through.

2.2 Extensive information exists on the factors influencing the speed and success of grassland creation schemes. Soil fertility and methods for reducing fertility, if required, alongside the selection of appropriate seed mixes and seed-bed preparation will require careful research prior to SANG implementation (Crofts & Jefferson, 1999; MacKintosh & Christal, 2015), with detailed proposals for the creation of SANG habitats set out at the Reserved Matters stage.

2.3 In terms of determining, for the purposes of the outline planning application, what can be achieved within two growing seasons, many sources describe grassland creation and establishment over the course of two growing seasons, with reference to grassland establishment and close management by cutting in the first growing season to control the spread of undesirable species, and with management relaxed in the second growing season to comprise cutting following the flowering period:

- *"Careful management is required during the first growing season to control competition from undesirable species and to encourage tillering and vigorous establishment of the sown sward. This is the priority in the first year, so flowers should not be expected until the second season."* (MacKintosh & Christal, 2015).

- *"For the first few years of its life your newly sown grassland will need some careful management to allow the wildflowers to grow, flower and set seed. The following management is recommended:*

  Control weeds- you should cut/top tall weeds such as docks and thistles several times a year for the first two years

  The first year's growth- In the first year you will need to prevent seedlings from getting smothered by vigorous grass growth. When the new grassland grows to a height of 10-15cm it should be mown to a height of about 5cm, and the grass cuttings removed. You may need to do this several times over the year

  The next few years- You should be aiming to allow the sward to 'fill-out' i.e. create a good coverage of wildflowers and grasses. The grassland should be cut (or grazed) once a year after it has flowered and the seed has dropped (late July – August)." (Buglife, 2012)

- *"During the first year, remove any annual and perennial weeds that appear. The year after the first sowing, the young meadow should be mown every time the vegetation height reaches 10-15cm. This is likely to mean cutting three or four times between spring and autumn depending on the fertility of the soil. Do not cut the meadow shorter than 5cm. Remove the cuttings and compost them. From the second year onwards, cut your meadow to a height of around 5cm after flowering (between late June and the end of August)."* (Natural England, 2007)

- *"After the first full season the sward should have thickened and it can be beneficial to allow it to flower and set seed before it is cut or grazed."* (Natural England, 2010).

2.4 The above extracts support the establishment of a suitably thickened sward with two growing seasons. Emorsgate seed, a commercial wildflower seed supplier, advise that a newly established sward can be walked upon within 3-4 months of sowing, and within 18 months it would be suitably established to allow turf to be lifted (Emorsgate Seed, personal communication)

2.5 The above extracts also indicate that by the second growing season, close management of undesirable species can be relaxed such that forbs within the grassland can be allowed to flower. Following the second growing season therefore, the time at which the proposed Wisley SANG would be first opened to the public, the above evidence indicates that there would be a reduced presence of undesirable species and the presence of flowering wildflowers and grasses.

2.6 Walker et al. (2004) highlight St Catherines's Hill in Hampshire as an example of grassland creation, which after just 2 years closely resembled the reference NVC community. An additional site in Minsmere, Suffolk provides another example of grassland habitat creation on a former arable leading to establishment of 12 out of 16 sown species in less than 2 years.

2.7 A further example regarding the speed with which flowering plants appear in the sward is provided by Charles Flower (2008) regarding a grassland creation scheme at Friars Court, Clanfield, Oxfordshire: Sowing- 2003; Germination- spring 2003; Autumn 2003- seedlings appear; Establishment 2004- 15 species of wild flowers and all the grasses within the mix present; Establishment 2006- 18 species of wild flowers.

3. Habitat Creation Case Studies

Langley Mead SANG

3.1 Langley Mead SANG was created by EPR on behalf of the university of Reading as part of the Shinfield West (South of the M4 SDL) development, Wokingham, as well as other smaller developments in the area known as Cutbush Lane and The Manor.

3.2 The Langley Mead SANG was created principally on land that was either in arable use or herb-poor pastures, all managed as part of a modern agricultural landscape. The flora and vegetation of these areas before habitat creation was not of any notable nature conservation interest.

3.3 Three main processes were carried out to begin the establishment of a more diverse range of habitats in the SANG fields:

- Bringing seeds to the (herb-poor) grasslands via green hay collected from herb-rich grasslands (from the BBOWT Moor Copse nature reserve west of Reading);
- Yellow Rattle and Bird's Foot Trefoil seeds were sown into the grassland areas; and
- A commercial seed mix based on National Vegetation Classification Type MG5 grassland was sown into the arable areas at an appropriate time of the year (autumn) when seed germination and seedling survival can be maximised (Spring is also suitable).

3.4 **Table 1** below provides photos detailing the progress of habitat creation at the Langley Mead SANG with associated timescales.

Table 1: Photographs of the Langley Mead SANG Habitat Creation.

	Pre-SANG June 2009 - Arable field.

	Pre-SANG June 2011 - Herb-poor permanent pasture.
	Pre-SANG June 2011 - Arable field.
	SANG 2015 - Previous arable field sown with wildflower seed late 2013.
	SANG 2015 - Previously species-poor improved grassland, harrowed and then species-rich green hay added from the Wildlife Trust's Moor Copse reserve.

	SANG 2015 - Previous arable field sown with wildflower seed late 2013.
	SANG 2014 – Arable field in 2013 then sown with wildflower grassland seed – shown here in flower for the first time in late Spring 2014.
	SANG 2014 – Arable field in 2013 then sown with wildflower grassland seed – shown here in flower for the first time in late Spring 2014.

Dilly Lane SANG

3.5 Dilly Lane SANG (now referred to Queen Elizabeth II Fields) was created by EPR on behalf of Barratt Homes as part of the St Mary's Park development in Hartley Wintney.

3.6 The SANG was created principally on land that was in arable use, all managed as part of a modern agricultural landscape. The flora and vegetation of these areas before habitat creation was not of any notable nature conservation interest.

3.7 In two localised areas on the site topsoil was scraped to provide very infertile conditions for herb rich vegetation to prosper. The remainder of field was ploughed and a seed bed was prepared. In addition a broad spectrum herbicide was applied as required to control aggressive

weeds. A commercial grassland mix of native and nutrient competitive species was then sown into the field.

3.8 **Table 2** below provides photos detailing the progress of habitat creation at the Dilly Lane SANG with associated timescales.

Table 2: Photographs of the Dilly Lane SANG Habitat Creation.

	Initial arable field 2009 (previously abandoned and as a result overgrown).
	Initial arable field 2009.
	Abandoned and overgrown arable field prior to SANG creation November 2010.

	Arable field after ploughing in 2010.
	Post sowing – 6 months growth. June 2011.
	Previous arable field – 18 months after sowing, June 2012.

	Previous arable field - 30 months post seeding, June 2013.
	Dilly Lane grassland, June 2013.

Abbotswood

3.9 EPR implemented the habitat creation components of the Landscape Plan for the Abbotswood development in Romsey on behalf of the Abbotswood Consortium (Taylor Wimpey, Bellway and Bovis Homes).

3.10 Amenity grassland habitat was created from previously grazed pasture. Herbicide treatment was applied to the area prior to harrowing, then the ground was harrowed again post seeding. Hedgerow and tree planting was then undertaken.

3.11 **Table 3** below provides photos detailing the progress of habitat creation at Abbotswood with associated timescales.

Table 3: Photographs of the Abbotswood Habitat Creation.

	Abbotswood pre seeding, Feb 2012.
	Abbotswood 2012 post seeding.
	Abbotswood grassland post seeding, July 2014.
	Abbotswood post seeding, July 2014.

	Abbotswood planting, Feb 2012.
	Abbotswood, May 2012.
	Abbotswood, May 2014.

Edenbrook Country Park SANG

3.12 Edenbrook Country Park SANG was delivered alongside a Berkeley Homes development in Hart District. SANG construction works began in 2008 and were completed in 2014. The site was originally dominated by species-poor grassland, arable fields and pasture land. Habitat creation of rough grassland and meadows was undertaken at this site. The meadow was established within 1 year and was managed in subsequent years to promote regeneration and reduce nutrient levels for wildflowers to prosper.

4. References

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MacKintosh, J. & Christal, A. (2015) *Using wildflower seed mixtures for grassland creation*. Information and Advisory Note Number 106. Scottish Natural Heritage.

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Appendix 8
Ockham & Wisley Commons & Chatley Heath Visitor Guide and Self-guided Trail, Surrey Wildlife Trust/Surrey County Council

OCKHAM & WISLEY COMMONS
& CHATLEY HEATH

SURREY wildlife TRUST

Visitor Guide and Self-guided Trail

SURREY COUNTY COUNCIL

Ockham and Wisley Commons & Chatley Heath

Lowland heathland is an open landscape of heather with scattered scrub and isolated trees and supports many specialist heathland species of wildlife. Today Wisley and Ockham is an important refuge for many of these species due to the widespread loss of heathland in Southern England and English Nature has designated the Commons a Site of Special Scientific Interest.

The origins of heathland began about 6,000 years ago as people cleared woodland for farming. This caused the sandy soils of the area to become more acidic, as nutrients were leached away, until only heather plants and coarse grasses could survive. These areas were then used for rough grazing which prevented trees recolonising. This traditional management over thousands of years maintained the heathland landscape and was beneficial for wildlife. Acid-loving plants, numerous species of invertebrates, reptiles and some species of birds depend on heathland for their survival.

Over the last 200 years Surrey has lost 85% of its heathland, both to other land uses, like forestry and road development, and natural reversion to woodland. As grazing stopped the neglected heaths were invaded by trees and open heath quickly disappeared. Unfortunately the heathland wildlife, which had adapted to this specialised environment over thousands of years, could not adapt to such a sudden change in habitat and some species have declined rapidly as a result.

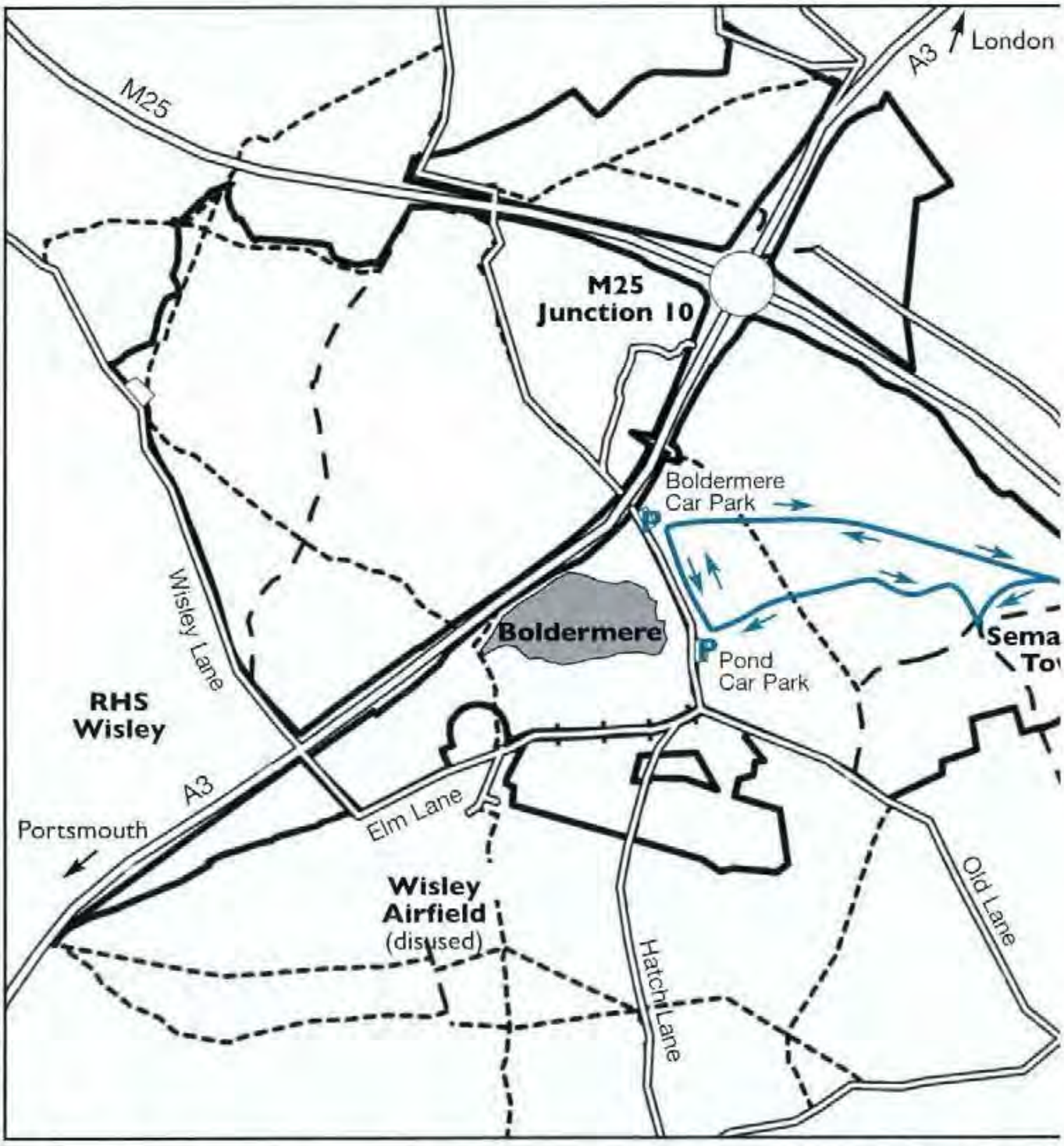
Heathland in the area is managed to enhance its wildlife value, particularly for the rare species found here. Invading scrub is removed, grazing has been reintroduced and former heathland areas previously converted to forestry plantations are being restored back to heathland. This habitat restoration has encouraged many rare heathland bird species to return to the Commons to breed.

In contrast to the open heathland areas there are large areas of magnificent broad-leaved woods on the site, such as Hatchford Woods. Native woodlands support a great variety of wildlife: birds like woodpeckers and warblers, as well as mammals, such as foxes and deer. Again traditional management, such as coppicing, is beneficial to a wide range of species. Coppicing has been introduced to manage the area known as Hunt's Copse. Non-native shrubs like rhododendron are being removed from across the Commons.

Owned by Surrey County Council this area is managed by Surrey Wildlife Trust

for nature conservation and public recreation. Everyone is welcome to explore the Commons via the extensive network of footpaths and horse rides.

Surrey Wildlife Trust is working with volunteers and the local community to maintain and enhance the wildlife value of the area. If you would like to help the area's wildlife please contact the Ranger direct.



For details of public transport in Surrey call Traveline 0870 608 2608 www.trav

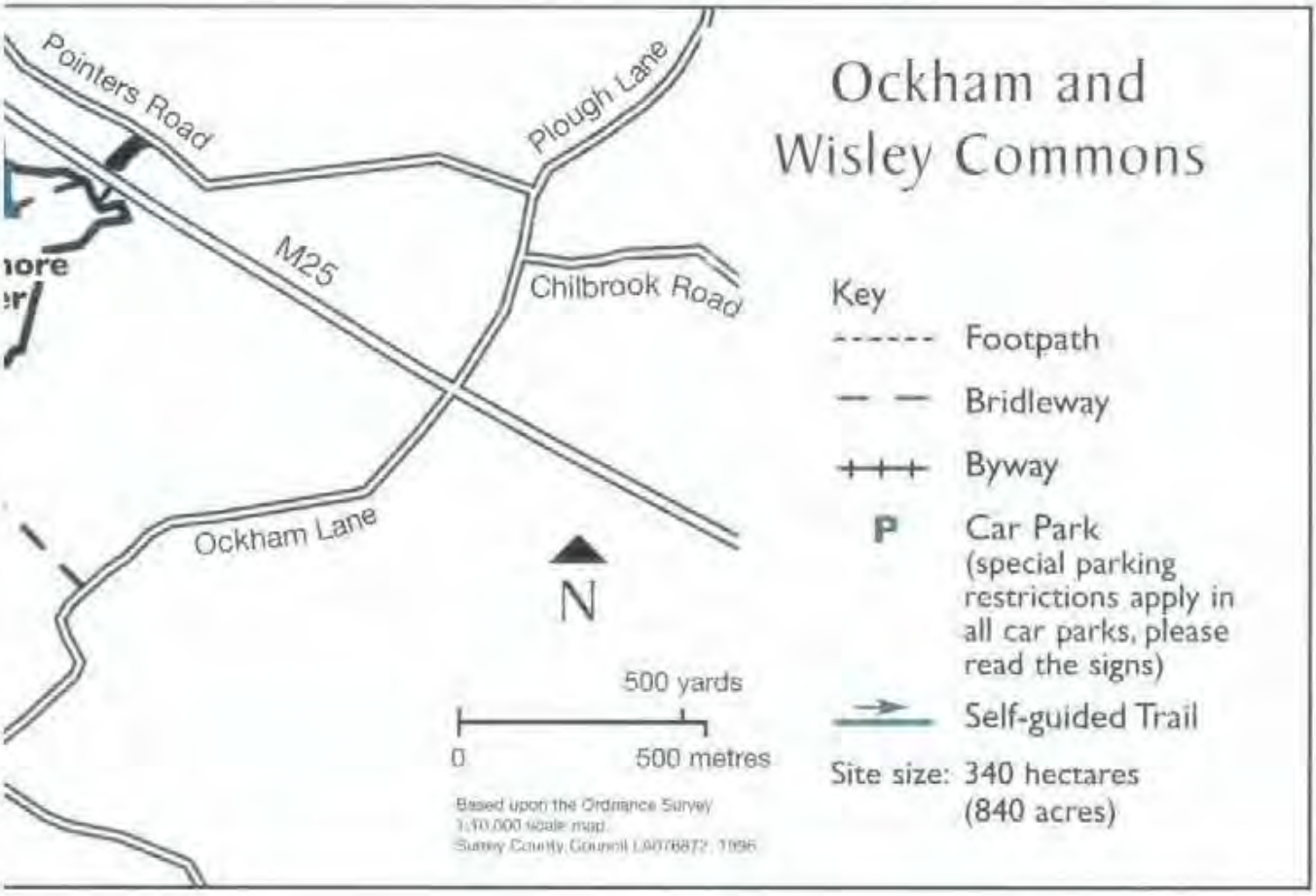
Self-guided Circular Trails

The Semaphore Tower is located on Chatley Heath. Built in 1822, the Tower was one of a line of semaphore stations between the Admiralty in London and Portsmouth naval base. Fully restored in 1989, it is now the only remaining Tower of the line.

Access to the Tower is available to interested groups by appointment only, also on advertised Open Days. For further information or to book a viewing please call 07894 660999.

Self-guided trails are waymarked from both car parks in Old Lane to the Tower. Both are along sandy tracks with no gates or stiles.

Follow the Blue Sailor waymarkers from Boldermere car park or the Red Sailor waymarkers from Pond car park; it will take about 20 minutes to reach the Tower. A path parallel to Old Lane links the red and blue trails to form a circular walk.



ine.org.uk

OS Explorer map 145 covers this area.

On both the BLUE and RED trails look for:

PINE AND BIRCH WOODLANDS

These areas show how much the countryside can change. These woodlands were once open heathland, but the heathland was planted up with Scots pine trees for their timber value. Although Scots pine is a native tree in Northern Britain, it was only introduced to Surrey around 1650. The planting up of heathland began during the time of the enclosures of common land. Ockham Common was subject to an enclosure award, taking it out of common land status in 1871. These woods have limited value for wildlife because they are dominated by one species of tree, the Scots pine, with very few native broad-leaved trees. Watch out for coal tits, the smallest of the tits, which feed on insects and particularly pine seeds. If you are really lucky you may see one of the woodland's most spectacular predators, the sparrowhawk. This bird of prey hunts small birds, like sparrows and tits, and has a preference for nesting in Scots pine.
It is intended to gradually increase the number of broad-leaved trees in the wood to improve its wildlife value. This will be achieved by felling some of the conifers, to allow trees like oak, birch and rowan more light and space, as well as to permit these native trees to set seed. Because old pines and standing dead trees are important habitats for insects and hole-nesting birds, like the great spotted woodpecker, they are retained wherever possible. Some areas of these woods adjacent to heathland maybe restored back to heath.

HEATHLAND

This specialised habitat still survives in the centre of the site, as trees have mainly colonised from the edge. An open landscape of heather with scattered scrubs and isolated trees, it is of immense importance for wildlife.
On the heath in summer watch out for dragonflies hunting small insects. Dragonflies are fascinating, beautiful insects: they can fly at up to 30 mph and even their names are delightful, like the brilliant emerald. Look out for lizards basking in open, sunny spots amongst the heather.

SCRUB

Birds like the nightjar nest on the ground in mature heather areas and scrubby woodland edge habitats. They nest on the heath because their main food source is nocturnal insects like moths, which the nightjars hunt by sight over the open heath. You will see thick areas of trees on the heath which are deliberately managed for nightjars. Nightjars overwinter in Africa and return to breed on the heath in May, then after raising their young return to Africa at the end of August. While breeding on the Common they mark their territory with their unique eerie and mysterious 'churring' song.
(Please make a special effort to control your dog during the bird-nesting season, February-September, to reduce disturbance to ground-nesting birds.)

HEATHLAND RESTORATION

Heathland restoration is undertaken initially by tree clearance, then the remaining humus material that has built up under the trees is removed. Exposing the bare soil allows heather seedlings to germinate, often from seed that has lain dormant for up to 80 years. Restored heathland, with young heather plants and areas of bare ground, is an ideal habitat for woodlark. This bird, which is similar to a skylark, is an extremely scarce species, it was recorded here in 1960 and did not reappear to breed again at Ockham until 1995. This demonstrates that heathland restoration is vital for rare species as well as adding to a diminishing wildlife habitat.

Surrey Wildlife Trust is restoring this important wildlife habitat in areas where it was found in the past. Areas adjacent to the existing heath have been selected making it easier for species to recolonise. All of the area below the Tower, which was previously pine woodland, has been restored to heathland.

THE SEMAPHORE TOWER GARDEN

The original Tower garden now contains several picnic tables from where you can view the Tower. In this area the first occupant, Lieutenant Harries, planted vegetables and soft fruit trees, and kept pigs and chickens. In this remote location he, like his successors, relied on the garden for much of his food.

We hope you have enjoyed your visit. If you have any comments, the Countryside Ranger for this site can be contacted on 07970 094416.

Surrey Wildlife Trust's mission is to protect and regenerate Surrey's wildlife.

The Trust is a registered charity (No: 208123). In partnership with Surrey County Council we currently manage 80 sites covering over 4,000 hectares of land, for nature conservation and public enjoyment. This includes the Trust's own nature reserves, SCC's countryside estate and land managed under access agreements with private landowners. A further 3,200 hectares are managed under a grazing contract with the MOD, making Surrey Wildlife Trust, in terms of land managed, the largest Wildlife Trust in England.

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Appendix 9
SPA User Behavioural Change Strategy

Wisley Airfield

Wisley Airfield SAMM-plus Wardening provision

SPA User Behavioural Change Strategy

Background

Wisley Property Investments Ltd is promoting Wisely Airfield for development as a new sustainable settlement to help meet Guildford Borough's urgent housing need. With a housing affordability ratio of 11x (average lower quartile earnings to average lower quartile house prices) Guildford is one of the least affordable places to live in the country. This identified obstacle to economic growth is a major hurdle to skilled / graduate employee recruitment / retention and is a priority of the M3 Enterprise LEP. Wisley Airfield is an allocated housing site in Guildford's emerging Local Plan.

Wisley Airfield's proposed housing development is located between 400m and 5km from the Thames Basin Heaths Special Protection Area ("SPA"), and as such impact avoidance and mitigation is required to address a potential increase in visitor pressure on the SPA, particularly with regard to the exercising of dogs off the lead and the associated risk of disturbance to the internationally protected ground nesting birds for which the SPA is designated.

It is recognised that the SPA area is open access land, as is identified on the 1:25k Ordnance Survey mapping, and as such the public cannot be prevented from entering the SPA. Accordingly the Wisley Airfield SAMM-plus Strategy and associated financial contribution to be secured through a s.106 is intended to promote the preferential use of the Wisley Airfield SANG by the public, and to better manage behaviours on the SPA to seek to reduce existing and future visitor impacts on the protected species.

Wardening

The development will fund, and a delivery partner (such as for example a local wildlife trust or community interest company) will deliver, wardening services. This function will have an average resource requirement of 1.5 FTE across the year and across the in perpetuity period, and will have a range of duties depending on the stage of the project, as articulated in the *Wisley Airfield SANG Management and SAMM Plus Strategy Scope of Wardening Provision* document.

The wardening resource will have or receive training in appropriate background knowledge regarding the local ecology and natural features of the SPA, and have relevant experience of or receive training in positive public engagement and behavioural change initiatives drawing upon research by Edwards & Knight (2006), SIRC (2008), Jenkinson (2011) and Hampshire Country Council (HCC, undated) (research described further below).

As a priority, the following will be delivered as a 'minimum standard' for the SPA wardening service (although will be subject to iterative review and modification, in agreement with Natural England):

- A wardening patrol service at peak visitor hours, being 7-9am and 5-7pm inclusive between Monday and Friday, and between 9am and 5pm on Saturday and Sunday, during the spring/summer, with times adjusted in the winter to reflect daylight hours but to maintain a daily warden presence on site;

- This resource will support and implement the behavioural change initiatives set out below to a minimum level of service.

Behavioural Change Initiatives

A body of research exists regarding the behavioural psychology of dog walkers (Edwards & Knight, 2006; SIRC, 2008; Jenkinson, 2011; HCC, undated).

This research highlights a lack of knowledge and awareness regarding aspects of expected behaviour when walking a dog in a particular location, such that the majority of users do not intentionally fail to comply with onsite requests.

SIRC (2008) state: *"the language used to communicate with dog walkers needs to be consistent and clearly state what action is required. Signage and information if often negative, site managers should work in partnership with HCC to design signage that is more positive and explanatory. Signage should be well managed and responsive"*.

HCC have drawn upon this work and the work of Edwards & Knight (2006) to suggest an approach to securing desired behaviours referred to in their guidance note as 'eights steps to change' (HCC, undated), these principles can be translated into the following:

Step 1 Identify the problem

Step 2 Identify the desired outcome

Step 3 Identify the desired behaviour to achieve the outcome

Step 4 Adapt site management or other practice to help change behaviour

Step 5 Communicate to users what the desired behaviour is and why

Step 6 Consider the wider consequences of any changes

Step 7 Evaluate whether changes implemented have successfully altered behaviour

Step 8 The last resort – consider legal enforcement to achieve desired outcome

This accords with management recommendations arising from Jenkinson (2011):

- Restrictive management approaches on their own are unlikely to be met with success, and should be used as a last resort;

- Access management requests should be communicated in a positive, engaging and constructive way, and through the provision of interpretation and signage that is up-to-date, clearly sets out the desired behaviour, the reason for requiring the desired behaviour, the time period during which the desired behaviour is required, and the alternative locations provided to allow continuation of the alternative behaviour; and

- Messages about desired behaviours should be communicated using multiple approaches, varied in terms of both format and source of delivery, and be tested with the end-audience before issue, with opportunities for feedback taken as part of ongoing review and improvement of the content and form of communications.

This body of research should be drawn upon to maximise the effectiveness of an ongoing campaign to achieve the outcomes set out below, with two key principles functioning at the core 1) ensure a positive message at all times; 2) convey messages that help dog owners to obtain the primary experiences that they seek, either on site or elsewhere, ensuring that the health and wellbeing of their dog is maximised:

- Achieve desirable recreational behaviours within the SPA, specifically dog walking on the lead during the bird nesting season, supported by positive public engagement via the following means:

    - Wardening patrols on the SPA and direct liaison with the public to encourage use of the lead and raise awareness of this strategy's key messages;
    - An education programme to the general public, including website, social and local media channels, and liaison with local schools, access groups (e.g. local dog walkers, BHS, ramblers) as to the importance of the SPA, its protected species and promoted off lead restrictions during the bird nesting season, and the benefits to dogs, owners and other users of complying with onsite access requests;
    - Support of the above measures by use of posters, leaflets and advertising/ information boards within the development and at appropriate SPA access points, to be refreshed and update on a regular basis;
    - Creation of a local dog walking community, by way of ongoing public liaison and organised dog walking/dog-themed events, that supports identified desirable behaviours and responsible recreation and help achieve peer-to-peer engagement and onsite policing.

- Encourage use of the Wisley Airfield SANG as an alternative dog off lead walking venue via the above wardening efforts and educational provisions, specifically promoting the following features that are likely to be attractive to dog walkers:

    - A range of all weather surfaced rural traffic free walking loops of varying lengths offering walks ranging from 30 minutes to several hours;
    - Extensive meadow environment providing a safe and attractive location to walk dogs off the lead and for dogs to safely roam widely and freely;
    - Features for dogs to have fun including large area suitable for games and ball/frisbee throwing and several ponds for dogs to cool off and swim.
    - Easy vehicle access from the A3 and free parking (subject to anti-commuting management restrictions).

- A variety of attractive and mature habitats providing varied interest for dogs and their owners;
- A destination viewpoint feature;
- Many seating and picnic areas;
- Wild foraging opportunities.

This behavioural change strategy would benefit from the open access land initiative described below, which would act to provide a means for 'hard' enforcement as the last step in achieving desired behaviours on the SPA.

Open Access Land Initiative

Natural England identify the following areas marked yellow as CRoW Access land, however Ordnance Survey 1:25,000 identifies the whole of the Wisley and Ockham Common Area as Open Access Land.

https://www.gov.uk/guidance/open-access-land-management-rights-and-responsibilities identifies that on open access land *"There is a general rule that visitors using their open access rights must keep dogs on a short lead of no more than 2 metres between 1 March and 31 July each year (except in the coastal margin) and at all times in the vicinity of livestock."*

There is an opportunity for SPA landowners/managers to introduce sanctions available under the CRoW Act 2000 to support enforcement of the above access restrictions across the Wisley and Ockham Open Access Land, or failing that for such access restrictions to be enforced by other means, as agreed with NE/GBC. The CRoW Act restrictions, subject to the discretion of those implementing the restrictions, allow those users choosing not to comply with dog on lead requests to be viewed as trespassers and be evicted for 72 hours.

The optimal means for enforcing access restrictions on the SPA are to be developed alongside development of the SANG Phase 1 and in advance of first housing occupation.

Further enforcement initiatives would be implemented as part of the Wisley Airfield SAMM-plus package. Therefore further allowance has been made within the SAMM costing assessment to facilitate enforcement action, as and when required, and to record incidents where enforcement action is taken.

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Sport Industry Research Council (2008) *Assessment of Perceptions, Behaviours and Understanding of Walkers with Dogs in the Countryside*.

Appendix 10
Wisley and Ockham Warden Role Profile

Wisley Airfield SANG Management and SAMM Plus Strategy
Scope of Wardening Provision

Introduction

Wisley Property Investments intends to fund the provision of a wardening capability in support of its TBH SPA Impact Avoidance Strategy. It intends to carry this out either directly through a Community Interest Company, or by contracting the provision from a suitable provider such as a Wildlife Trust.

The purpose of the wardening will be to effect the proper management of the Wisley Airfield SANG, and encourage the establishment and maintenance of patterns of behaviours of new residents at Wisley airfield and to the SPA / PROW existing visitor cohort. The provision will also assist with the proper management of the SPA, including assistance with education and improvement works.

The information provided below is intended to provide a starting point for defining the scope of the warden provision, however it is intended that the warden role profile and funding requirements be developed in consultation with Guildford Borough Council, Natural England (including the TBH SAMM Project lead), SPA land manager Surrey Wildlife Trust, and with potential service providers.

Principle Wardening Activities

In conjunction with the development team during construction of the new sustainable community, and thereafter in conjunction with community bodies such as the Community Land Trust and / or the Parish Council, Registered Providers of affordable housing, Guildford Borough Council housing and Gypsy & Traveller Liaison officers, neighbouring stakeholders such as RHS Wisley and Surrey Wildlife Trust, the on-site education and other service providers to coordinate and carry out management activity of the SANG and other targeted initiatives on the SANG and SPA, alongside or as part of the behavioural change strategy set out at **Appendix 9**, including (but not exclusively):

- The maintenance repair and periodic renewal of the physical infrastructure of the SANG, including ensuring the success of the planting strategy. To include coordination of contractors where appropriate, or carrying out of ranger activities personally;
- Promoting the use of the SANG to on-site residents, and also to the wider public community;
- Providing public engagement, guiding and educational activities/initiatives to include (for example):
    - Guided dog walks to establish patterns of dog walking behaviours in the SANG and SPA-avoiding routes;
    - Maintenance of a SANG-promoting and SPA-educating online offer, potentially in conjunction with SWT.

- Production and maintenance of leaflets, posters, events, campaigns, workshops, educational events, clubs and societies and other promotion of awareness of wildlife and countryside issues generally, and in particular relating to the SANG and SPA.

- Potential to promote wider wildlife diversity initiatives such as "wild garden" exemplar demonstration gardens in common areas scaled to typical unit house garden dimensions. Regular manning of an onsite physical warden touchdown point, potentially in cooperation with police community liaison staff. Maintenance of information boards and "visitor centre" information provision in e.g. village centre café and/or other appropriate locations;

- Encouraging appropriate behaviours on the SPA (e.g. dogs on leads in the SPA in bird nesting season, poop scooping, etc.) by means of initiatives such as mounting patrols of frequently used paths and relevant areas, and working with existing rangers and wardens (including those employed by the TBH SAMM Project) to provide consistent messages to SPA visitors;

- Enforcing unwanted behaviours on the SPA where necessary, and as a last resort to positive engagement;

- Engaging with the public away from the development site to increase awareness regarding the new SANG and other non-SPA recreational areas;

- Promoting, organising and leading the provision of volunteer labour to assist with the appropriate management and improvement of the SANG, and potentially the SPA;

- Providing input to the targeted design and implementation of onsite access and habitat management measures, for example redesigning the walking routes promoted onsite to avoid the most sensitive ground nesting bird areas, implementing a dog zoning policy within the site, installation of temporary fencing to prevent formation of desire lines, strategic habitat management to dissuade the formation of unwanted desire lines and input to other ongoing site management activities that are most likely to achieve the desired access management outcomes and responsible behaviour;

- Monitoring the use of the SANG and SPA, through maintenance of an access incident log and monitoring of visitor access following a methodology to be agreed with Natural England; and

- Assisting with, and/or carrying out ecological and other survey work, including monitoring of vegetation in specific air quality affected exceedance areas within the SPA / SSSI through NVC surveys carried out during the summer months in the years 2031 (i.e. at completion of the Wisley development) and 2036 (5 years after completion).

Likely Extent of Wardening Provision

It is likely that the wardening activity will cross several competencies, and that these will evolve as the community and SANG progress and become fully established.

1. Initial phase - project management and place-making role. Strong IT and coordination skills to liaise with contractors constructing the housing scheme and the SANG phases, and establish new patterns of behaviour with new and existing residents;

2. Establishment phase – strong educational and interpersonal skills to establish interest in wildlife issues, lead guided dog walks, deliver talks in schools and to community groups (eg periodic lectures, workshops or seminars in the community hall or parish room), assist with the establishment of volunteer groups. Continue to manage multi-channel behavioural campaigns including signage, posters, leaflets, online website forum, etc.; and

3. Maintenance and ongoing improvement phase – as per 2 above, but a long- term role established in the community. An element of ranger competencies will be required for this role, carrying out hands on maintenance and physical works, on the SANG, and potentially in support of the wider SPA management in conjunction with SWT.

Although the hours of work will to some extent be flexible, and will evolve through the lifetime of the project, there will be key times where consistent warden presence is required. For example daily (including weekend) patrolling on the SPA will be required (as a minimum service provision) during the spring and summer timed to coincide with peak periods of visitor access (7-9am and 5-7pm inclusive between Monday and Friday, and between 9am and 5pm on Saturday and Sunday; with times adjusted in the winter to reflect daylight hours but to maintain a daily warden presence on site) and focussed on key areas that are subject to the greatest visitor pressure and/or are most sensitive to visitor access.

It is likely that a level of flexibility will be required for the role, and it may be resourced by more than one individual, particularly as the scheme evolves. Personnel with particular skills may be deployed to the role on a part-time basis as appropriate to deliver the mix of skills and competencies required, but consistent management of the overarching role will be required throughout, which will need to complement existing TBH SAMM Project warden provision through close liaison with TBH SAMM Project personnel. The role will also require close liaison with existing SPA land managers, SWT.

The wardening provision is therefore not envisaged to necessarily be a conventional 9-5, 5 days per week role, and it is likely that the role will require flexible working to cover peak periods of activity such as weekends, and some evening activity may be required, particularly in the educational aspects of the role. The table below sets out the anticipated hours required for completion of key warden tasks, taken as an average/week, and with spring/summer and autumn/winter deviations noted. This indicates that across the year, and the in perpetuity period, an average of 1.5 Full Time Employees (FTEs) is likely to be required, taking into account a proportional seasonal contingency and an overall rounding up to buffer the time available to achieve the required service provision.

The wardening provision will be managed by the service provider (e.g. SWT or other contracted party) or by the Community Interest Company, with reference to the service level specification to be agreed in principle with Guildford Borough Council as a planning obligation, and varied from time to time as appropriate in conjunction with appropriate competent bodies such as for example GBC, SWT and/or Natural England.

Table 1: Seasonal wardening tasks and anticipated hours required per week for completion.

	Average Hours/Week	
	Spring/Summer	**Autumn/Winter**
Weekly SANG patrol, manage snagging list, coordinate contractors/volunteer labour, public engagement	10	15
Lead guided walks/organised events, av. 1 per month, half day to plan and lead	1	1
Maintain web-based advertising of events/campaigns and educational material via bespoke website and social media	2	1
Maintain non web-based advertising of events/campaigns and educational material via leaflets, adverts, signage, presence at community centre	2	1
Daily SPA public liaison patrol (Spring/Summer: 7-9am, 5-7pm Mon-Fri ; 9-5pm Sat/Sun. Autumn/Winter: 8-9am, 3-4pm Mon-Fri; 9-10am, 2-3pm Sat/Sun)	36	14
Maintain SPA access incident log/raise urgent issues with SWT	2	1
Winter review of SPA access incident log & MP, input to access management initiatives		2
Total	53	35
Add seasonal contingency 15%	60.95	40.25
No. FTE (37.5hrs/week)/season	1.41	1.07
No. FTE / year	1.24	
Total annual FTE provision with further buffer	**1.5**	

Wisley Airfield

Suitable Alternative Natural Greenspace – Outline Habitat Creation & Management Plan

Final Report
November 2015

P14/67 – 3D

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Wisley Airfield
Suitable Alternative Natural Greenspace - Outline Habitat Creation & Management Plan

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Wisley Airfield
Suitable Alternative Natural Greenspace - Outline Habitat Creation & Management Plan

1. INTRODUCTION

Brief

1.1 This document, prepared by Ecological Planning & Research Ltd (EPR) on behalf of Wisley Property Investments Ltd, is an Outline Habitat Creation and Management Plan for a proposed area of Suitable Alternative Natural Greenspace (SANG) on land at Wisley Airfield in Surrey. It forms the foundation for more detailed Landscape Ecological Management Plans that will be produced as individual SANG phases come forward.

Background

1.2 Wisley Property Investments have submitted an outline planning application for a residential-led development comprising up to 2,060 dwellings, 8 Gypsy and Traveller pitches, approximately 7,260m² of commercial employment space, circa 50ha of SANG and other supporting services and infrastructure. The provision of SANG as set out in this document is part of a strategy to avoid a likely significant effect on the Thames Basin Heaths Special Protection Area (SPA), as detailed in the 'Information for Habitats Regulations Assessment' produced in respect of the proposed development (EPR, 2015).

Planning Context with Respect to the Thames Basin Heaths

1.3 The Thames Basin Heaths SPA designation covers a number of heathland Sites of Special Scientific Interest (SSSIs) across the South East, that support three ground-nesting bird species listed on Annex 1 of the European Habitats Directive 1992 (transposed into UK legislation by the Conservation of Habitats and Species Regulations 2010 (as amended)). The UK has a European commitment to the protection and enhancement of populations of these birds. Nightjar *Caprimulgus europaeus*, Woodlark *Lullula arborea* and Dartford Warbler *Sylvia undata*. **Map 1** shows the location of the site in relation to the nearest areas of SPA heathland.

1.4 Research indicates that disturbance from public access, and predation of nests by domestic pets, represents a significant threat to protected ground-nesting bird species, and that their habitats are affected by eutrophication, trampling, increased risk of fire and flytipping (Underhill-Day, 2005). New residential development close to the heaths increases this threat by introducing more people and their pets. In light of this research, the Joint Strategic Partnership Board (JSPB) of affected local authorities in and around the Thames Basin Heaths SPA produced the 'Thames Basin Heaths Delivery Framework' (July 2009), which outlines means by which residential development can avoid a significant negative effect on these bird species.

1.5 Drawing upon, and consistent with, the Delivery Framework, Guildford Borough Council has produced its own Thames Basin Heaths SPA Avoidance Strategy 2009-2016 (2010).

1.6 These Strategies exclude development within 400m of heathland since certain effects, primarily cat predation, cannot be avoided within this zone. Between 400m and 5km, where effects associated with dog-walking are likely, avoidance measures can be applied, including the provision of SANG and Strategic Access Management and Monitoring (SAMM).

1.7 To be effective as an alternative recreational destination to the Thames Basin Heaths SPA for both new and existing residents, the SANG must present particular characteristics which are favoured by existing and potential users of the SPA. Natural England's 'Guidelines for the Creation of Suitable Alternative Natural Greenspace' describe characteristics that are required or desirable when creating a SANG, based on survey responses provided by visitors to the SPA (NE, 2008) – see **Appendix 1**.

1.8 The key requirement is that a SANG should be perceived as a 'natural' environment. This will usually mean that it should have a mixture of semi-natural habitats; be easily accessible by new and existing residents; and provide a range of walks across a network of naturally surfaced paths, including a circular walk of at least 2.3km. It should also be possible for dogs to be let off the lead for a substantial part of the walk throughout the year. **Section 3** of this document relates these requirements to the objectives of habitat creation and management within Wisley Airfield SANG.

1.9 The Delivery Framework and Natural England's SANG Quality Guidelines also require existing features of nature conservation value to be taken into account when designing SANGs. **Section 2** describes the features of nature conservation value within the proposed Wisley Airfield SANG, and **Section 3** outlines relevant aims and objectives for conserving these features.

2. ENVIRONMENTAL & ECOLOGICAL CONTEXT

Introduction

2.1 This section presents a summary of existing environmental and ecological baseline conditions within the site of the proposed SANG, as a means to inform its design and creation. Consideration of such contextual information will serve to promote the successful establishment of the proposed SANG, and the development of an assemblage of habitats that is at once naturalistic and sympathetic to the present and historic character of the broader landscape.

Physical Context

Location & Site Description

2.2 As appears in **Map 1**, the Application Site (hereafter the 'Site') occurs within the Borough of Guildford, to the north of the village of Ockham, equidistant between the urban settlements of Leatherhead to the east and Woking to the west.

2.3 The Wisley Airfield Site extends to 114.7 hectares and comprises areas of farmland, woodland and scrub, in addition to the vestiges of the disused airfield (**Map 2**). The broader landscape context comprises a mosaic of semi-rural residential areas, golf courses, woodland, and agricultural land. Ockham and Wisley Common, a component SSSI of the Thames Basin Heaths SPA, lies to the north. It is made up on nine separate units, categorised as dwarf shrub heath, standing open water and canals.

2.4 As represented in **Map 3**, the proposals for SANG provision at Wisley Airfield include delivery of two non-contiguous blocks of SANG, which respectively occur along the northern edge and at the south-western corner of the Site. These blocks are to be connected by two SANG Links, as well as other Green Infrastructure corridors.

2.5 At present, the larger area of proposed SANG, which occurs at the northern edge of the Site, largely comprises arable fields and extensive areas of hardstanding associated with the disused airfield. The smaller block of proposed SANG, in the south-western corner of the site, presently comprises mature woodland, improved grassland and scrub.

Geology and Soils

2.6 The majority of the Site, and the entire area of the larger block of proposed SANG, is underlain by sand of the Bagshot Formation. A plateau of superficial river terrace sand and gravel deposits outcrops over the centre of the Site.

2.7 The south-western corner of the smaller block of SANG is formed by a low-lying valley on a bedrock of London Clay, overlain by clay, silt, sand and gravel alluvium.

2.8 The prevalent soil type within the majority of the application site is river terrace drift of the 571w Hucklesbrook association, which is characterised as comprising *"well drained coarse*

loamy and some sandy soils, commonly over gravel" (Soil Survey of England & Wales, 1983).

2.9 "*Naturally very acid sandy over clayey and loamy over clayey soils*" of the 643a Holidays Hill association occur toward the western extent of the application site.

2.10 In the absence of intensive anthropogenic intervention, these conditions would be expected to favour the development of neutral and acid grassland or deciduous woodland, with the potential for mixed wet and dry lowland heathland communities to develop within the more distinctly acid western area.

Topography

2.11 The Wisley Airfield runway was constructed on an east - west shallow ridge that gradually falls from approximately 45m AOD at its eastern end to 37m AOD in the west.

2.12 The landform within the northern SANG area falls away gradually toward the north and west. The western end of the runway was raised during its construction, creating slopes up to 1:6 in gradient, that fall towards Stratford Brook within the southern SANG area.

Hydrology

2.13 Stratford Brook, a tributary of the River Wey, flows from southeast to northwest through the southern SANG area, occupying a channel width of approximately 2-3m.

2.14 Land within the northern SANG area principally drains toward the north, via several drainage ditches. The southern SANG area drains to the Stratford Brook.

Landscape History

2.15 Analysis of historical maps indicates that the Site was in agricultural use in the early nineteenth century. The Land Utilisation Survey of 1936 represents almost the entire site - with the exception of a narrow band of meadowland along the course of Stratford Brook - as being in arable use, which indicates that the soils within the majority of the site have formerly been subject to cultivation.

2.16 The airfield was established in 1944 for the purpose of testing aircraft built at the nearby Brooklands factory. Although the runway and other extensive areas of associated hard-standing remain extant, most of the buildings associated with the airfield have been demolished since its closure in 1972, and much of the site has since been restored to arable use.

2.17 The site's former use as an airfield has resulted in a distinctively open and largely featureless landscape of large unbound fields.

Existing Habitats

Northern SANG Area

2.18 As represented on **Map 2**, the northern SANG area principally comprises large arable fields and extensive areas of hardstanding associated with the disused airfield.

2.19 A small block of linear woodland occurs at the northern boundary of the Site. This area is dominated by Oak and Silver Birch, with occasional Ash and Hazel. Bracken, Bramble and Ivy are locally dominant within the field and ground layers.

2.20 Blocks of scrub have developed in parts of the Site. These principally comprise Bramble, woody species such as Elder, Birch, Ash, Hazel and Willow, and ruderal herbs such as Nettle, Dock and Willowherb.

2.21 Part of the northern SANG area encompasses the Wisley Airfield Site of Nature Conservation (SNCI) which was designated for its notable floral assemblage.

Southern SANG Area

2.22 An area of wet woodland, dominated by Alder, Willow and Oak, occurs along the course of Stratford Brook. Occasional Hazel and Hawthorn shrubs form a rather sparse understorey. Ground Ivy and Nettle are locally abundant within the field layer. Himalayan Balsam, an invasive species, has been recorded along the brook's northern bank and is subject to an ongoing eradication programme.

2.23 The wet woodland succeeds to the north into improved species-poor grassland with developing scrub.

2.24 Further areas of arable land, scrub and tall ruderals occur toward the eastern extent of the southern SANG area.

2.25 Part of this SANG area also encompasses part of the Wisley Airfield SNCI.

Adjacent Habitats

2.26 Areas of broadleaved woodland on base-poor soils occur immediately to the north of the northern SANG area. Elm Corner Woods and Hunts Copse, both Sites of Nature Conservation Importance (SNCI), are respectively located towards the western and eastern ends of the northern boundary and are listed on Natural England's Provisional Ancient Woodland Inventory.

2.27 The species-rich grassland of Snakesfield, which is managed as a Local Nature Reserve by Surrey Wildlife Trust, also occurs immediately beyond the northern boundary, interjacent to these woodlands areas.

2.28 The southern SANG area is bordered to the south by linear woodland and pasture grassland.

Existing Wildlife

2.29 Survey work undertaken by RPS between 2013 and 2014 (and previously) identified the presence of several protected or otherwise notable species within the Site and its surrounds. EPR has subsequently undertaken further update survey work in 2015, as described within the main Ecology chapter of the Environmental Statement. A summary of the findings is provided below.

Birds

2.30 The Site as a whole offers a variety of suitable habitats for breeding and wintering birds. Forty-two bird species were identified in the course of breeding bird surveys, of which thirty-two species were determined to be breeding within the Site, including five species of conservation priority listed in Section 41 of the Natural Environment and Rural Communities Act 2006 (Dunnock, Linnet, Skylark, Song Thrush and Starling).

2.31 In terms of the general distribution of birds, the highest proportion of bird activity was recorded within the western half of the Site within the scattered scrub, and woodland habitat within and adjacent to the Site.

2.32 The key breeding bird species include a suite of farmland birds supported by farmland habitats (cultivated fields, scrub and surrounding hedgerows and woodland), including widespread but declining species such as Skylark, Whitethroat and Linnet.

2.33 Overall, the majority of the bird assemblage comprises common and widespread species associated with hedgerows, woodland, grassland and scrub.

Bats

2.34 During the activity transects carried out by RPS in 2013, at least six species of bat were recorded. A number of bat foraging areas and commuting routes were identified, associated with linear and boundary features (including woodland edges, grassland margins, tree avenues, hedgerows, scrub corridors and woodland). Bat activity was concentrated around linear features present near the site boundary with the highest number of bats recorded along the northern boundary of the Site (between the A3 and Elm Corner); along the southern boundary of the Site (adjacent to the watercourse and the riparian woodland); and on the north-eastern boundary (adjacent to Old Lane).

2.35 Moderate foraging activity by Common and Soprano Pipistrelles, and occasional passes by Noctule, Serotine, Leisler's Bat and Myotis bat species were recorded during bat activity surveys conducted within the Site.

Badgers

2.36 In 2013 a total of two active main badger setts were identified on the Site, along with a further disused main sett. One active annex, subsidiary and outlier sett were also recorded on the Application Site at the time of the walkover (RPS, 2013). The 2015 survey concluded that the activity on site had altered notably since 2013; with one of the previously identified main setts taken over by rabbits, a disused sett now an active main sett and an additional outlier sett recorded.

2.37 Based on the results of all the surveys it is concluded that the Site is utilised by at least two comparatively mobile badger clans; two main setts are located on Site, and it is considered likely that at least one additional clan, with an off-site sett, uses the Site for foraging and commuting.

Amphibians

2.38 Pond surveys conducted in 2013 identified the presence of low numbers of Smooth Newt, Common Toad and Common Frog in ponds within the Site.

2.39 Update amphibian presence/likely absence surveys, which included two 'off-site' ponds within 250m of the Site boundary, were undertaken in 2015. No Great Crested Newts were recorded breeding onsite, although breeding in one pond 250m to the south of the Site was recorded. The survey results indicate a population size classified as 'low' (English Nature, 2001)) as being centred on this offsite pond, with a peak count of 7 adults.

2.40 Three juvenile Great Crested Newts were recorded on Site during the first reptile survey, along the southern boundary and towards the western end of the airstrip. These individuals are likely to have dispersed into terrestrial habitat on Site from the breeding pond to the south, despite this habitat being suboptimal for GCN. Another juvenile Great Crested Newt was also recorded in a Surrey Wildlife Trust meadow that adjoins the northern Site boundary (personal communication, SWT), suggesting that there is a second breeding population to the north of the Site centred on an unknown pond that has not been mapped by the Ordnance Survey nor is visible on available aerial imagery.

Reptiles

2.41 Survey work undertaken in 2013 determined that the Site supports low populations of the four common reptile species. Slow Worms, Common Lizards, Adders and Grass Snakes were recorded within the northern parts of the Site (principally along the northern boundary and other linear features) and Grass Snakes were recorded within the southern parts of the Site.

2.42 The 2015 update survey recorded reptiles predominantly along boundary habitats, with Slow Worm, Common Lizard and Grass Snake recorded. No Adders were recorded during the 2015 survey, indicating that this species is no longer present on Site. Of the species recorded during 2015, no more than 5 adults were recorded per visit, indicating that the Site supports 'Low' and declining populations of these three species.

Biodiversity Context

Introduction

2.43 At the national level, Biodiversity 2020: A strategy for England's wildlife and ecosystem services (DEFRA, 2011) provides an overarching biodiversity strategy, with four key targets for action, of which 'putting people at the heart of biodiversity policy' is most relevant to the proposed SANG.

2.44 The Surrey Biodiversity Action Plan (BAP) transposes national strategic objectives into targets for species and habitats that have been identified as conservation priorities at County level. Ten priority Habitat Action Plans (HAPs) are promoted in the Surrey BAP. HAP targets and objectives of particular relevance to existing and proposed habitats within Wisley Airfield SANG are provided in **Table 1** below.

Table 1: Surrey HAP Targets and Objectives Relevant to the Creation of Wisley Airfield SANG.

Habitat Action Plan	Relevant Targets & Objectives
Lowland Unimproved Neutral & Acid Grassland	*Objective 5.* Restore and recreate areas of neutral and acid grassland to buffer existing grass and heathland sites. Recreate habitat on degraded meadows, pastures and arable land. *Objective 8.* Ensure that seed of native origin is used in all neutral and acid grassland restoration/creation schemes, and that this is of local origin wherever possible.
Woodland	*Target 4.1.* Promote habitat and structural diversity within woodlands (by encouraging management practices such as ride management, coppicing, thinning, selective felling and restocking) *Target 4.3.* Promote a co-ordinated removal of non-native invasive plant species throughout Surrey's woodland, in particular rhododendron and cherry laurel. *Target 7.1.* Ensure that new woodland establishment avoids habitats of non-woodland conservation importance, is designed to enlarge and link existing woods and wherever possible consists of natural regeneration. New planting should comprise site-native broadleaved trees where possible.
Wood Pasture and Parkland	*Objective 4.* Restore and create areas of wood pasture to extend and buffer existing sites. Recreate habitat on neglected or overgrazed sites.
Standing Water & Large Reedbeds	*Objective 7.* In suitable areas, encourage the creation of open water and large reedbed habitat, particularly where this promotes a corridor / stepping stone concept linking both open water and reedbed habitats together, both within and without the County.
Urban	*Objective 4.* Help to ensure that new developments produce a demonstrable gain for wildlife. *Objective 6.* Create and improve opportunities for organisations and people to take action for wildlife.

3. AIMS AND OBJECTIVES

Introduction

3.1 This section considers the aims and objectives of habitat creation and management within the proposed Wisley Airfield SANG. Underpinning the habitat creation and management proposals are two principal aims and six derived objectives, whose achievement can be monitored as a means to evaluate the efficacy of implementation and management work and to guide future changes to the Management Plan.

Aims

3.2 The principal aims of habitat creation and management within Wisley Airfield SANG are to:

- Provide a convenient and accessible, enjoyable and satisfying recreational experience in a natural environment, so that new and existing residents in the area, who would otherwise travel to the Thames Basin Heaths SPA, with or without a dog, opt to visit Wisley Airfield SANG as an alternative; and

- Protect and enhance the naturalness, biodiversity, and local character of the Wisley Airfield SANG area, to increase its likely effectiveness as a SANG and in accordance with policy and legislative requirements.

Objectives

3.3 These principal aims are supported by a series of more specific objectives:

1) To deliver and maintain an accessible greenspace resource in fulfilment of criteria set out in Natural England's 'Guidelines for the Creation of SANG';

2) To create new semi-natural habitats in order to achieve biodiversity gains and produce a diverse, naturalistic and attractive landscape;

3) To restore and enhance existing degraded habitats in order to achieve biodiversity gains and produce a diverse, naturalistic and attractive landscape;

4) To manage for both amenity value and biodiversity benefit;

5) To provide opportunities for public engagement and involvement in the management of the SANG; and

6) To deliver ecological mitigation and enhancement measures outlined in the *Wisley Airfield Environmental Statement, Chapter 8 (2015)*.

3.4 The remainder of this section outlines the means by which these objectives - and thus the main aims from which they derive - will be achieved.

Objective 1: *To deliver and maintain an accessible greenspace resource in fulfilment of criteria set out in the Joint Strategic Partnership Board's 'Thames Basin Heaths Delivery Framework' and Natural England's 'Guidelines for the Creation of SANG'.*

3.5 While SANG is normally provided at a rate at least 8ha per 1,000 population, this figure can vary according to site circumstances. Natural England has advised that SANG should be provided at a rate exceeding the 8ha/1,000 population standard for the Wisley Airfield scheme, on account of its proximity to the SPA and the presence of existing Public Rights of Way (PROW) which have the potential to lead new residents towards the SPA.

3.6 The proposed development will comprise up to 2,068 dwellings of which 60 units will be C2 Use Classes and 8 will be Gypsy and Traveller Pitches. NE has agreed that subject to suitable planning condition these units can be discounted from SANG requirement calculations. For the purposes of SANG requirement calculations, the development is consequently considered to constitute 2,008 dwellings, which, given an average occupancy rate of 2.4 persons, would be expected to introduce 4,819 new residents. Accordingly, more than 38.6ha of SANG must be provided.

3.7 Two discrete blocks of SANG will be provided to the north and south of the proposed development footprint. Cumulatively these blocks will provide 49.9ha of SANG, which exceeds the standard 8ha/1,000 population standard (before discounting; refer to the 'Information for HRA' report in relation to capacity discounting).

3.8 **Appendix 1** relates the specific characteristics of Wisley Airfield SANG to the required and desirable attributes set out in Natural England's 'Guidelines for the Creation of SANG'.

3.9 SANG creation proposals will be informed by the underlying requirement to deliver landscaped areas in a relatively well-established and immediately attractive condition, to ensure that the SANG represents a desirable destination - and consequently an effective influence on patterns of recreational behaviour - from the very outset of the development.

Objective 2: *To create new semi-natural habitats in order to achieve biodiversity gains and produce a diverse, naturalistic and attractive landscape.*

3.10 The following new habitats are proposed for delivery within the Wisley Airfield SANG:

- Ponds;
- Expansive areas of dry and wet meadow grassland, including blocks of native species scrub and scattered trees;
- Short mown grassland, primarily intended to serve a recreational function;
- Native species hedgerows; and
- A traditional orchard.

3.11 Prescriptions for habitat creation will be informed by an emphasis upon complementing existing features of ecological interest, and achieving consistency with the existing and historic character of the landscape within the Site and its surrounds.

3.12 This approach will serve to promote the development of a greenspace resource that is both culturally and ecologically characteristic of the local area, and will increase the habitat resource available to species which, as set out in **Section 2** above, are already present within and around the Site.

3.13 Creation of these habitats will also contribute to the achievement of the relevant Surrey HAP objectives set out in **Section 2** above.

Objective 3: *To restore and enhance existing degraded habitats in order to achieve biodiversity gains and produce a diverse, naturalistic and attractive landscape.*

3.14 The following elements of habitat restoration work are proposed:

- Diversification and enhancement of unmanaged woodlands and scrub through implementation of traditional management techniques, and
- Eradication of invasive plant species.

3.15 Restoration of woodland habitats will contribute to the achievement of the relevant Surrey HAP objectives set out in **Section 2** above.

Objective 4: *To manage for both amenity value and biodiversity benefit.*

3.16 Ongoing management will be undertaken to promote both the amenity and biodiversity value of the SANG, including such actions as:

- Upkeep of site furniture and infrastructure;
- Aftercare of newly established habitats; and
- Ongoing conservation management of new and existing habitats to safeguard their nature conservation value and that of the species that they support.

Objective 5: *To provide opportunities for public engagement with the SANG and involvement in its management to instil social responsibility.*

3.17 It is the intention of the developer to pass the SANG to either a Community Land Trust, a management company, Statutory Authority or local Wildlife Trust for management in perpetuity. Ongoing management will include wardening and public engagement (as detailed further within the 'Information for HRA' report) - in accordance with the objectives of the Surrey Urban HAP, as set out in **Section 2** above. Site wardens can engage with local residents using such established techniques as running voluntary work parties to undertake management and monitoring tasks, arranging guided walks, and supervising activities for children.

Objective 6: *To deliver ecological mitigation and enhancement measures outlined in the* Wisley Airfield Environmental Statement *(2014).*

3.18 Habitat creation and management within Wisley Airfield SANG will provide opportunities to mitigate ecological impacts arising from the proposed development. A suite of mitigation and enhancement measures are set out in Chapter 8 of the Environmental Statement, of which the following are of particular relevance to this Management Plan:

- Provision of a suitable and safe receptor site for amphibians and reptiles translocated from the development footprint;
- Provision of amphibian and reptile hibernation and refuge features, and enhancement of the quality, extent and connectivity of amphibian and reptile habitat;
- Provision of suitable receptor sites for the translocation of soil from parts of the Wisley Airfield SNCI that have the potential to contain dormant seeds of notable annual plants (a separate assessment regarding the potential loss of best and most versatile agricultural land, including the results of detailed soil surveys in accordance with TIN049, will be provided alongside the forthcoming Regulation 22 ES Addendum submission to GBC);
- Enhancement of habitat value for invertebrates, and provision of log piles and stag beetle loggeries;
- Provision of native fruit and nut bearing tree species to enhance the foraging resource available for Badgers;
- Provision of habitat for breeding and wintering birds; and
- Provision of connectivity within a network of naturalistic greenspace areas, to enhance landscape permeability by amphibians, bats, badgers, reptiles and other fauna.

4. PHASING

Introduction

4.1 This section sets out the proposed phasing of implementation and habitat creation works within Wisley Airfield SANG, and provides guidance on seasonal constraints to which certain tasks are subject.

4.2 SANG areas which will be delivered in the course of each implementation phase are represented in **Map 4**.

4.3 Further information regarding the delivery of SANG and ecological mitigation measures is set out in the 'Ecological Mitigation Phasing Plan' repot (EPR, 2015).

Objectives of SANG Implementation Phasing

4.4 The phased approach to the implementation of Wisley Airfield SANG has been informed and directed by a number of specific objectives, which are set out below:

- To achieve the phased delivery of SANG capacity in parallel with the increasing demand generated by the proposed residential development;
- To provide an adequate SANG resource in fulfilment of Natural England guidelines and other quality requirements set out in the *'Wisley Airfeld Information for Habitats Regulations Assessment'* report (EPR, 2015), prior to first occupancy;
- To provide newly created habitats in a well-established condition, with each phase of SANG provision to have at least two year's maturation prior to its respective occupancy, so as to ensure the SANG's immediate attractiveness and effective influence upon patterns of recreational behaviour from the outset of the development;
- To expedite the establishment of vegetative and topographic screening structures, which will serve to mitigate noise and visual impacts arising from the development; and
- To ensure the harmonisation of implementation works with other elements of the development process, giving due consideration to dependency relationships and accommodating the safe movement of visitors, residents and construction traffic.

SANG Implementation Phase 1, 2016-18

Preliminary Works:

4.5 Several elements of preliminary groundwork will be undertaken prior to or alongside the commencement of habitat creation work, including:

- Phased removal of extant hardstanding associated with the disused airfield as necessary to deliver SANG phases;
- Creation of ponds and SuDS features within the northern SANG area;

- Commencement of the first phase of construction of the woodland 'tump' - a substantial earth landform - within the northern SANG area and an earth rampart along the northern edge of the southern SANG area; and
- Creation of series of low earth mounds in order to diversify the topography of the northern SANG area; as a means to strategically influence patterns of recreational behaviour by reducing the conspicuity and perceived convenience of potential routes towards the SPA; and in order to provide additional refuge opportunities for species of nature conservation value within the SANG.

4.6 More detailed prescriptions for preliminary groundwork will be provided in a separate *Phase 1 SANG Landscape and Ecological Management Plan* which will be submitted immediately following consent to expedite discharge of Conditions and SANG implementation

Provision of Phase 1 SANG

4.7 38.7ha of SANG will be provided to serve the first phase of residential development. As represented in **Map 4**, the Phase 1 SANG will comprise the majority of the southern block of SANG, and the majority of the northern block of SANG, and will include:

- A SANG car park;
- A SANG Link between the car park and the Phase 1 SANG areas;
- Two circular SANG walks, 3.9km and 1.8km in length (with shorter options also available), and
- A variety of semi-natural habitats, including wet and dry meadow grassland; wet and dry woodland; scrub blocks; scattered trees; and ponds.

4.8 Outline habitat creation prescriptions are provided in **Section 5** below. A summary list of implementation actions is given in **Appendix 3**.

SANG Implementation Phase 2, 2024-2026

Provision of Phase 2 SANG

4.9 A further 2.1ha of SANG will be provided prior to occupation of the 1,558th house of the proposed residential development. This will comprise:

- Further phased construction of the tump landform within the northern SANG area; and
- Grassland, scrub blocks, scattered trees and ponds to the northwest of the tump.

SANG Implementation Phase 3, 2025-2027

Provision of Phase 3 SANG

4.10 Prior to the occupation of the 1,643rd house of the proposed residential development, a further 8.4ha of SANG will be provided. This will be achieved by:

- completion of the turnip within the northern SANG; and
- completion of the far western end of the northern SANG area, which will provide a variety of habitats including wildflower meadow, tree planting and a traditional orchard.

SANG Implementation Phase 4, 2026-2028

Provision of Phase 4 SANG

4.11 Prior to occupation of the 1,981st house of the proposed residential development, a final 0.7ha of SANG will be provided. This will be achieved by:

- removal of the construction access road and completion of the final northwest corner and northern edge of the southern SANG.

Seasonality of Implementation Works

Tree Planting

4.12 Planting of bare-root stock should be undertaken between late October and early March, avoiding the active growing season. During this period, moderate and relatively stable air temperatures prevail, and soil temperature and moisture levels are usually within a range that promotes rapid root development. Planting should not be undertaken in frosted or waterlogged conditions.

4.13 The tree planting season can be significantly extended through the use of rootballed, container grown or cell grown stock which are less susceptible to transplant stress.

Sowing Seed Mixtures

4.14 Autumn and spring (i.e. August/September or March/April) are considered the optimal periods for sowing seed. Seed mixtures that incorporate the hemi-parasitic forb Yellow Rattle as a means to constrain the dominance of vigorous grass species, should be sown in autumn, as this species requires the influence of cold conditions and frost before it will germinate.

Distributing Green Hay

4.15 Green hay should be harvested at a time when most target species have finished flowering and undergone seed development (typically mid-July to early August). It can be desirable to undertake a series of two or more phased harvests in order to introduce seed material from species with a wide range of flowering habits.

Tree and Scrub Clearance

4.16 Any clearance of trees, hedgerows or scrub undertaken in the course of implementation work should be conducted where possible between September and February (inclusive), to avoid the bird nesting season, as nesting birds are afforded protection under the Wildlife & Countryside Act 1981 (as amended).

4.17 If such works must be undertaken within the nesting season, it will be necessary for a suitably experienced ecologist to check the vegetation to be removed no more than 24 hours before the commencement of operations. The discovery of an active nest in the course of this check would require the maintenance of an exclusionary buffer zone until such time as any fledglings depart the nest.

5. SANG IMPLEMENTATION PHASE 1

Introduction

5.1 This section characterises the features and habitats that will be established during the first phase of SANG delivery work and provides outline prescriptions for implementation and habitat creation. More detailed prescriptions will be provided in a *Phase 1 SANG Landscape & Ecological Management Plan*.

5.2 The underlying objective of this phase is the provision of a functionally and spatially adequate SANG resource to serve the first phases of the proposed residential development. This will involve the provision of 38.7ha of SANG, including a car park, a SANG Link and the 3.9 and 1.8km circular SANG walks within the northern and southern SANGs, respectively.

5.3 As represented in **Map 4**, Phase 1 implementation will include the delivery of the southern block of SANG - excluding the northwest corner to the north of the temporary construction access road and a narrow rampart where it abuts the southern edge of the adjacent development - and the central and central eastern area of the northern block of SANG - excluding the far eastern extremity, the tump landform to the west and the area to the north of the tump. It will include preliminary earthworks at the north east tip of the tump and incorporation of screening of subsequent tump construction phases. It will also include delivery of the SANG Link connecting the Phase 1 SANG area to the car park.

5.4 The proposed distribution of habitats upon completion of Wisley Airfield SANG is represented in **Map 5**, and the proposed layout of site infrastructure in **Map 6**.

Provision of Infrastructure

Car Park

5.5 A new car park will be created at the eastern end of the southern SANG area. In this phase, at least 50 parking spaces will be provided - of which a proportion will be used by staff of the adjacent primary school and for accessing the amenities of the settlement, with 30 reserved for SANG visitors.

SANG Link

5.6 A SANG Link, incorporating the existing PROW within a semi-natural corridor comprising wildflower grassland, scrub, native species-rich hedgerows and scattered native species standard trees, will be created to connect the car park to the Phase 1 northern and southern SANG compartments. The SANG Link will be fenced to provide a safe enclosed corridor, with appropriate signage to direct visitors to the adjoining SANG areas. Habitat creation within the SANG Link will be completed at the same time as the Phase 1 SANG areas to create a continuous and suitably established corridor from the car park to the SANGs, and to ensure visual screening of adjacent construction areas.

Fencing and Access

5.7 Attractiveness to dog-walkers will be an essential attribute of the SANG. To this end, the SANG will provide secure, enclosed areas, within which dogs can be freely exercised off the lead.

5.8 A range of measures will be employed to achieve the enclosure of SANG areas, including provision of fencing, wet ditches, landscaped embankments and boundary planting. In keeping with the naturalistic, semi-rural character of the SANG, boundary fencing will be of timber post-and-wire or post-and-rail construction, and fitted with stock netting. Temporary dog-proof fencing will be installed to prevent public ingress into areas of SANG which will be delivered during subsequent phases.

Paths

5.9 The 3.9km circular walk will be provided within the northern SANG area. Both the circular walk and the line of the existing bridleway between the SANG car park and the tump (the SANG link) will take the form of bound gravel paths in order to allow year-round, all-weather and all-ability access, and to promote the attractiveness of the SANG walk in relation to the informal and less consistently navigable paths within the nearby SPA.

5.10 With the exception of the bridleway between the car park and the tump, existing Public Rights of Way (PRoWs) which pass through the SANG but do not comprise promoted SANG walking routes, will be maintained as unsurfaced and unedged paths, except where they directly intersect surfaced sections of the circular walk.

5.11 Culverts or simple timber footbridges will be provided where the path network intersects the SuDS corridor within the northern SANG block.

5.12 A 1.8km circular walk will be provided within the southern SANG block. This will take the form of a bound gravel path, except along the low-lying southernmost section of the route where boardwalk will be provided owing to the hydrological conditions, in addition to two simple timber footbridges traversing Stratford Brook.

Site Furniture

5.13 The use of site furniture and signage will be minimised in order to maintain an informal, semi-rural ambience within the SANG interior. The distribution of benches, bins and information boards will principally be concentrated within key activity areas, such as around main access points. Timber will be the predominant material, in simple, robust designs.

Habitat Creation & Enhancement

5.14 The proposed layout of the SANG has been informed by the objective of producing a complex of habitats that complements the existing character of the landscape. To this end, the distribution of proposed species-rich meadow grassland areas within the centre and

central eastern area of the northern SANG broadly corresponds to the location of established meadow habitat at Snakesfield, which occurs beyond the central part of the northern boundary. Similarly, the location of proposed areas of new woodland within the SANG reflects the adjacency of ancient woodland at Elm Corner and Hunt's Copse, which respectively occur toward the western and eastern ends of the northern boundary.

5.15 In the long-term, this approach will serve to promote the interconnectivity of habitat units on a landscape scale, and enhance dispersal and colonisation opportunities for flora and fauna.

Ponds

5.16 Pond creation within the SANG will be directed by several specific objectives. In addition to serving a hydrological function as part of the site's Sustainable Drainage System (SuDS), newly created ponds will provide habitat for aquatic flora and fauna; attractive focal points with a naturalistic character; and an exercise resource for dogs.

5.17 Pond footprints will be mechanically excavated and an artificial liner installed, where required. Excavated subsoil will be backfilled over the liner (where installed) to a minimum compacted depth of 300mm. This backfilled substrate will be graded and sculpted to form gently sloping, irregularly contoured sides and a series of marginal shelves, the depth of which will be varied in order to accommodate the requirements of a broad range of marginal and submerged aquatic plant species. For each pond, a broad and gently shelving "beach" will be created at the point facing the nearest path, to serve as an ingress and emergence point for dogs. After backfilling, the maximum depth of each pond should be approximately 1m.

5.18 The pond margins will be sown with a native species wetland seed mix. Once the ponds are at least partly filled, native species marginal and aquatic plants - either in the form of plugs or pre-planted coir pallets - will be planted directly into the substrate. Such planting will be predominately concentrated away from the dog access beach, and plant selection will favour vigorous species that are relatively tolerant of disturbance, such as Lesser Pond Sedge and Yellow Flag Iris.

5.19 Residual spoil produced in the course of pond excavation work will be graded into bunds or used in the remediation of areas where hardstanding was formerly present.

Grassland Creation

5.20 An expansive meadow grassland resource will be created on areas that were formerly hard-surfaced or in arable use. The objective of grassland meadow creation will be the establishment of a rough mosaic of wet and dry species-rich wildflower meadow areas, punctuated with blocks of scrub and scattered trees.

5.21 The juncture between wet and dry meadow areas will take the form of an indistinct, naturalistic gradation, as opposed to a clearly defined linear boundary, and will broadly correspond to the contours of the landscape and the location of the SuDS corridor.

5.22 In addition to this wildflower meadow habitat - which will be managed predominantly for biodiversity value and visual interest - an expanse of relatively short sward grassland will be provided towards the eastern end of the Phase 1 area. This short grassland will be managed predominantly for amenity purposes and will be maintained as open turf in order to encourage use for exercise and recreation.

5.23 The juncture between these two grassland habitat types will be "soft" and sinuous, so as to create an indistinct, naturalistic gradation, as opposed to a clearly defined linear boundary. Despite the primacy of its amenity function, the short sward grassland will be rich in native species, in accordance with the naturalistic character of the SANG.

5.24 The wildflower meadow and short sward grassland will be created by removal of arable crops and hardstanding; cultivation undertaken to produce a friable seedbed, and the introduction of native meadow grass and wildflower species. The initial rate of establishment of finer grasses and wildflowers may be constrained by the site's history of agricultural improvement, which is likely to favour more vigorous species. However, the abundance and distribution of desirable meadow species should increase over time, as soil nutrient levels gradually deplete following the discontinuation of fertiliser input and the adoption of an extensive management approach.

Initial Establishment

5.25 Application of a commercially available native meadow grass and wildflower seed mixture will represent the primary means of grassland habitat creation. A general purpose native meadow seed mixture (such as Emorsgate EM2) would be distributed within the majority of the proposed dry meadow areas and over low mounds created in the course of preliminary groundworks. A wetland meadow mixture (such as Emorsgate EM8) would be distributed within lower lying areas toward the north and west of the northern SANG area, and along the SuDS corridor.

5.26 Short sward grassland habitat will be created by the application of a proprietary native species seed mixture including slow growing grasses and wildflowers that respond well to regular mowing (such as Emorsgate EL1).

5.27 Seeding would be undertaken in spring or autumn. Prior to seeding, the seedbed would be cultivated and subjected to a herbicide application programme. Seed would be distributed over the site at the rate specified by the supplier. The site would be then be lightly rolled to ensure firm contact between seed and soil.

5.28 In certain areas, seeding will be supplemented by the translocation of topsoil that has the potential to contain dormant seeds of notable annual plants, from areas of Wisley Airfield SNCI. Specific receptor sites for topsoil translocation will be selected on the basis of the similarity of their environmental and contextual characteristics to those of the corresponding donor sites.

Subsequent Enhancement

5.29 Application of green hay may be utilised as a means to enhance the newly created sward, if required. Use of green hay ensures that seed material is of local provenance and provides greater species diversity than commercially available seed mixes. Snakes Field, which occurs immediately to the north of the SANG, has been provisionally identified as one potential green hay donor site, subject to agreement.

5.30 Green hay strewing would be undertaken between late July and September, after most meadow species have flowered and set seed, in the year following the initial seeding. Prior to the application of green hay, the sward would be lightly harrowed in order to create germination niches.

5.31 Green hay would be taken from the donor site by means of a forage harvester and distributed thinly and evenly with a mechanical spreader, at a harvesting to spreading ratio of approximately 1:3. Spreading would be undertaken immediately after harvesting, lest temperature increases arising from decompositional processes threaten the viability of seed material. Approximately one week after the application of green hay, the receptor area would be lightly rolled to ensure firm contact between seed and soil.

Scrub Blocks

5.32 Discrete 'islands' of scrub will be planted within both newly created and existing grassland areas, in order to diversify and break up the predominantly open structure of the landscape within the interior of the SANG. Scrub blocks will also fulfil a strategic landscape function, providing visual separation at pinch points between parallel path sections.

5.33 Once established, these scrub blocks will provide a valuable refuge and foraging resource for wildlife, and will contribute to the development of an ecotone or transitional gradation between the open grassland of the interior and the woodland which occurs within the north of the SANG.

5.34 Irregularly shaped shrub blocks will be created by planting native species shrubs in an informal grid. It is envisaged that, in aggregate, the extent of scrub planting will equate to approximately 10% coverage of the meadow grassland areas.

5.35 To promote the delivery of landscaped areas in a relatively well-established and immediately attractive condition, scrub blocks will be planted using a combination of transplants and larger feathered trees so as to provide the impression of instant structural diversity, and create an immediate landscape impact.

5.36 A provisional species list for shrub planting is given in **Appendix 2**. To promote the successful establishment of new scrub habitat, and its consistency with the broader landscape, species selection has been informed by the composition of the existing scrub and woodland habitat within the site and its surrounds, which has an affinity with the National Vegetation Classification (NVC) W10 woodland community (*Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland), a widespread base-poor lowland woodland

assemblage within southern England. Shrubs of the same species will be combined in clusters, to mimic the natural aggregation of species.

Scattered Trees

5.37 Scattered standard trees will be planted at irregular intervals on either side of the path network within open meadow areas in order to create individual points of interest and provide an immediate landscape impact.

5.38 These trees will develop increasing biodiversity and landscape value as they mature and, in some cases, approach veteran status. A provisional planting list for scattered trees is given in **Appendix 2**.

Woodland

Woodland Creation

5.39 Further tree planting will be undertaken in order to complement and enhance the existing woodland resource which occurs at the northern boundary of the Site.

5.40 A provisional planting list for woodland trees, which will be planted as transplants and feathered trees in an informal grid, is given in **Appendix 2**. The planting scheme will promote the development of a graded, non-linear woodland edge, incorporating sheltered bays or 'scallops'.

Woodland Enhancement

5.41 Restorative management will be undertaken to facilitate public access and enhance the biodiversity value of existing woodland habitat.

5.42 Selective removal and coppicing of immature trees and scrub will be undertaken in order to increase the degree of light penetration to ground level, and thereby promote the development of a more diverse ground flora assemblage. The establishment of a more open understory layer will also serve to increase the perceived safety of SANG users by improving visibility and ensuring that paths are not enclosed by dense tree and scrub cover.

5.43 A key objective of selective thinning and coppicing will be the establishment of an irregular, scalloped woodland edge in order to promote the naturalistic character of the SANG and maximise the complexity and extent of edge habitat.

5.44 Arisings from the initial restorative management of wooded areas will be retained on-site in the form of densely stacked piles of logs and brash and half-buried stag beetle loggeries to the extent that this is consistent with the aesthetic and naturalistic character of the SANG. Provision of these features will represent a habitat enhancement for reptiles, invertebrates and other fauna, as outlined in the Environmental Statement.

5.45 If it is considered necessary to chip a proportion of the arisings, the resulting woodchip will be incorporated into the path surface. Dead wood will be retained in situ for the benefit of saproxylic invertebrates.

5.46 The area of wet woodland in the southern SANG area will be further enhanced by the implementation of an invasive species eradication programme, undertaken in accordance with the separately issued Wisley Airfield Invasive Species Method Statement (RPS, 2013).

Hedgerow

5.47 A new native-species rich hedgerow will be planted along the central part of the northern SANG boundary. Once established, this feature will serve to link the newly planted woodland areas which occur toward the eastern and western extents of the northern boundary. The hedgerow will provide breeding habitat for birds, and a foraging resource, refuge and dispersal corridor for a wide range of species.

Reptile Habitat Enhancements

5.48 Specific enhancement work will be undertaken in order to maximise the extent and capacity of suitable reptile habitat throughout the SANG. Reptile hibernacula, refuges and basking locations will be provided by burying piled logs of varying diameter under loose topsoil, in order to form vegetated earth mounds with sheltered voids and cavities. Such features will be incorporated within the network of low mounds and bunds produced for the purposes of microtopographical diversification, and also provided at locations where the interface of open grassland and shrub planting makes a range of vegetative cover and basking conditions available.

Advance Works

5.49 Further implementation work will be undertaken to prepare habitats in advance of their incorporation into the second phase of SANG provision. This will principally comprise enhancement of existing woodland and planting of additional woodland and scrub to the northwest of the tump. These works will be undertaken in accordance with the Phase 1 woodland creation and enhancement methods set out above.

6. SANG IMPLEMENTATION PHASE 2

Introduction

6.1 This section provides outline prescriptions for implementation and habitat creation in the second phase of SANG delivery.

6.2 A further 2.1ha of SANG will be delivered in order to provide sufficient aggregate capacity in advance of further occupancy of the residential development. As represented in **Map 4**, Phase 2 implementation will include incorporation of the land to the northwest of the tump.

Habitat Creation & Enhancement

Ponds

6.3 Further ponds will be created to the northwest of the tump in accordance with the pond creation methods set out in **Section 5** above.

Grassland

6.4 Further grassland will be created within the Phase 2 SANG provision to the northwest of the tump. This will include an expansion of the Phase 1 wildflower meadow area, which will be created through seeding with a general purpose proprietary meadow seed mixture (such as Emorsgate EM2), and structurally diversified through the planting of scrub blocks and scattered trees, in accordance with the Phase 1 grassland and scrub creation methods set out in **Section 5** above.

6.5 Main walking routes will comprise bound gravel paths in order to ensure year round/all abilities access.

Scattered Trees and Scrub

6.6 Scattered trees planted as part of advance planting works during Phase 1 will be integrated into the Phase 2 SANG area, and further tree planting and creation of scrub blocks will be undertaken in accordance with the methods set out in **Section 5** above.

Advance Works

6.7 Further implementation work will be undertaken to prepare habitats in advance of their incorporation into the third phase of SANG provision. This will principally comprise enhancement of existing woodland and planting of additional woodland toward the eastern extent of the northern SANG boundary. These works will be undertaken in accordance with the Phase 1 woodland creation and enhancement methods set out in **Section 5** above.

7. SANG IMPLEMENTATION PHASE 3

Introduction

7.1 This section provides outline prescriptions for implementation and habitat creation in the third phase of SANG delivery.

7.2 A further 8.4ha of SANG will be delivered in order to provide sufficient aggregate capacity in advance of further occupancy of the residential development. As represented in **Map 4**, Phase 3 SANG provision will be achieved by delivery of the eastern end of the northern SANG and completion of the tump within the northern SANG.

Habitat Creation & Enhancement

Advance Planting

7.3 The majority of the Phase 3 SANG provision comprises woodland and hedgerow habitat which will have been created or enhanced in the course of advance works conducted during the preceding implementation phases. This approach will ensure that these areas are subject to a considerable maturation period prior to their incorporation into the SANG, and are consequently delivered in a well-established and immediately attractive condition.

Grassland, Scrub & Scattered Trees

7.4 Further wildflower grassland will be created at the far eastern end of the northern SANG, beyond the central short sward grassland area and circular walk, and to the northwest of the tump. Grassland will be created through seeding with a general purpose proprietary meadow seed mixture (such as Emorsgate EM2), and structurally diversified through the planting of scrub blocks and scattered trees, in accordance with the Phase 1 grassland and scrub creation methods set out in **Section 5** above.

Tump

7.5 The tump is a substantial proposed landform within the northern SANG area, which will be created from the arisings of preliminary groundwork within the development site and SANG. Standing up tp 32m higher than the existing ground level at the base of the proposed tump (which is in turn at a lower level than the runway by approximately 10m), this feature will become a focal point and landscape destination within the SANG, offering elevated views towards the surrounding countryside and distant North Downs. The establishment of the tump will contribute toward the development of a distinctive character and identity for the SANG, and consequently enhance its attractiveness to recreational visitors.

Habitat Creation

7.6 On account of its composition from sandy sub-soils excavated from the site, and the free-draining conditions created by its elevation and gradient, the tump will present an opportunity for the establishment of a more characteristically base-poor (acid) grassland assemblage, which would be consistent with the underlying environmental context and the character of the broader landscape.

7.7 Acid grassland habitat will be established by seeding the tump with a suitable proprietary seed mixture (such as Emorsgate EM7). Prior to seeding, the landform will be graded into smoothly flowing contours, and subjected to a herbicide application programme. Seed would be distributed over the site at the rate specified by the supplier. The tump may be then be lightly rolled to ensure firm contact between seed and soil. This process could be complemented with soil and seed translocated from the SNCI where conditions are considered to be suitable for the establishment of annual plants

7.8 A zig-zag walking route will be established across the tump as well as a maintenance track; these will be comprised of a bound aggregate surface to allow vehicle access for maintenance and all-abilities access.

Orchard

7.9 A low intensity traditional orchard will be created at the eastern extent of the northern SANG area. This feature, comprising rows of native fruit and nut bearing trees planted within open grassland, will represent a characteristic vestige of the cultural landscape, and contribute to the development of the SANG's distinctive semi-rural character. Once established, the orchard will provide both a productive community resource and a foraging opportunity for badgers and other fauna.

7.10 The orchard will be established within an area of short sward grassland created in accordance with the method set out above. Widely spaced native species fruit and nut bearing trees will be planted in rows that are sympathetic to the existing contours of the landscape.

8. SANG IMPLEMENTATION PHASE 4

Introduction

8.1 This section provides outline prescriptions for implementation and habitat creation in the fourth and final phase of SANG delivery

8.2 A further 0.7ha of SANG will be delivered in order to provide sufficient aggregate capacity in advance of the final occupancies of the residential development. As represented in **Map 4**, Phase 4 SANG provision will be achieved by the removal of the temporary construction access road, completion of the final northwest corner and northern edge of the southern SANG and extension of the SANG car park.

Habitat Creation & Enhancement

Grassland, Scrub & Scattered Trees

8.3 Grassland areas to the northwest and northern extents of the southern SANG will be re-created following decommissioning of the temporary construction access road. Grassland will be created through seeding with a general purpose proprietary meadow seed mixture (such as Emorsgate EM2), and structurally diversified through the planting of scrub blocks and scattered trees, in accordance with the Phase 1 grassland and scrub creation methods set out in **Section 5** above.

9. ONGOING MANAGEMENT

Introduction

9.1 This section provides guidance on aftercare required to ensure the successful establishment of new and enhanced habitats within the SANG, and ongoing management work that will be undertaken to maintain its amenity and biodiversity value.

Infrastructure Maintenance

9.2 Regular maintenance checks will be conducted to identify and remedy damage to items of amenity infrastructure. Periodic vegetation clearance around paths, gates, benches and trees will be undertaken as required in order to maintain unobstructed public access, and keep the circular walk, PRoWs and connecting footpaths in a navigable condition.

9.3 The SuDS corridor will require periodic maintenance to maintain its efficient function, including the sensitive removal of built up silt. Further detail regarding the management of the SuDS corridor will be provided within a separate Phase 1 SANG Landscape and Ecological Management Plan, although silt management is anticipated to be required on a long-term basis, and can be completed within small sections on rotation, so as to reduce any visual impacts on the attractiveness of the SANG habitats, and during the winter to preserve the function of the SANG at the most critical time of year (spring and early summer) when the Annex 1 birds are nesting on the SPA.

9.4 Removal of loose litter and emptying of dog waste and litter bins will be undertaken at appropriate intervals.

9.5 In the longer term, items of site furniture and infrastructure will be repaired or replaced as required in order to maintain the safety and accessibility of the SANG, and the integrity of perimeter fencing.

Post-Implementation Planting Maintenance

9.6 Aftercare of newly planted trees and shrubs will be undertaken during the establishment period - *i.e.* for approximately 3 years after planting. The planting maintenance programme will include:

- Regular weed control to reduce competition for nutrients, water and light;
- Hand-weeding to remove weeds from inside tree guards and maintain mulched standard tree surrounds in a weed-free condition;
- Annual topping up of mulch around standard trees.
- Watering of standard trees during drought;
- Assessment and adjustment of tree ties, guards and staking systems;
- Re-firming trees and tree stakes after frosts and high winds; and
- Formative pruning of standard trees.

9.7 In early autumn in the first year after planting, a review of tree survivorship will be undertaken in order to inform a replacement planting programme conducted in the immediately subsequent winter. If any failures are considered attributable to site conditions, then alternative options should be considered, such as replacement with a species that is more likely to succeed, or planting in a more favourable position.

9.8 Spiral guards, tree-ties and stakes should be removed from standard trees approximately three years after planting - or at such time as the trees are considered to have become successfully established. Voids formed by the removal of tree stakes should be backfilled with loose soil.

Habitat Management

Ponds

9.9 Monitoring will be undertaken to identify any failures of the pond liner, accumulations of litter, and the introduction of non-native plant species, which should be expeditiously removed.

9.10 In the longer term, management intervention may be required to ensure that aquatic flora are maintained at optimal levels. If plant cover extends across more than 80% of a pond's surface, up to 30% of aquatic vegetation should be removed. Any such removal should be undertaken in late autumn or winter and in an appropriately sensitive fashion.

Scrub Blocks

9.11 The objective of ongoing management of scrub blocks will be the promotion of a dense, vigorous, low-growing condition, so as to provide effective refuges for wildlife including birds, Badgers and reptiles, and to avoid undue restriction of visibility across the predominantly open landscape of the SANG's interior.

9.12 Shrubs within scrub blocks will be coppiced or pollarded on a 7-10 year rotation, subject to rates of growth. No more than 30% of shrubs within each scrub blocks should be coppiced or pollarded in any one year.

Scattered Trees

9.13 Standard trees will be subject to ongoing formative pruning to promote good form and apical dominance. In the longer term, trees which show poor form or symptoms of poor establishment will be coppiced or pollarded, and thereafter managed as low bushes.

Short Sward Grassland

9.14 Ongoing grassland management within the SANG will be undertaken with reference to the three broad habitat sub-categories: short sward grassland managed primarily for

recreational purposes; species-rich wildflower meadow that will be of greater value to, and managed for, wildlife, and grassland on mounds.

9.15 Short sward grassland areas – including open grassland between tree rows within the orchard – will be mown throughout the growing season at a frequency appropriate to the maintenance of sward height in the range of approximately 50-200mm.

Wildflower Meadow

9.16 The objective of wildflower meadow management will be to enhance the floral diversity, and thereby the visual attractiveness, of the meadow sward. This will be achieved by allowing wildflower species to flower and set seed on an annual basis, and by gradual nutrient depletion through repeated cropping of the sward. A second objective will be to develop the physical structure of the meadow to provide habitat of greater value to birds and reptiles. This will be achieved through targeted and/or rotational cutting to create a range of sward heights and densities.

Year One Management

9.17 In the first year after sowing, the wildflower meadow should be mown four times to a height of approximately 50-75mm, at approximately even intervals throughout the growing season. Arisings should be removed from the meadow area.

9.18 The objectives of this preliminary approach will be to deplete nutrients by repeated cropping, control the initial flush of annual weeds, and promote root establishment by grasses and wildflowers.

Subsequent Management

9.19 From the second year after sowing, management will take the form of a main annual hay cut in late summer or autumn, and supplementary cuts in spring and late autumn – which may not be required on an annual basis.

9.20 The spring cut will be undertaken in the second, third and fourth years after sowing. Thereafter, a spring cut will only be undertaken if it is considered likely to be beneficial to the achievement of management objectives, depending on the productivity and diversity of the sward.

9.21 The purpose of spring cutting will be to expedite nutrient depletion and promote wildflower development by removing the first annual flush of vigorous grass growth. The meadow will be mown to a height of approximately 50-75mm in late April.

9.22 The main hay cut will be undertaken in late summer or early autumn, once most annual wildflower species have flowered and set seed. The precise timing can be varied according to management objectives: early cutting (early July to mid-August) will be most effective for

nutrient depletion and control of coarse grasses; late cutting (mid-August to early September) provides longer enjoyment of flowering plants and allows late flowering species to set seed.

9.23 Given the considerable extent of open meadow habitat to be provided at Wisley Airfield SANG, the development of a diverse and balanced sward can be most effectively achieved by dividing the meadow into between 2 and 4 discrete management compartments, which will each be cut at different points during the hay-cutting season in order to favour species across the seasonal flowering spectrum, and to promote the simultaneous availability of a range of sward heights and structures.

9.24 Some areas of grassland will also be left uncut for a year or longer – either as scattered islands, along meadow margins, or at the interface between open meadow and shrub habitats– to promote the development of a rough, tussocky structure and provide dense ground-level cover for reptiles, small mammals and invertebrates. Uncut areas will be rotated to prevent unwanted scrub encroachment, while ensuing the permanent and widespread availability of a resource of dense vegetative cover.

9.25 The commencement of the annual hay cut should be expedited if the sward collapses due to excessive productivity, density or bad weather. If this results in a particularly early hay cut, a subsequent late autumn cut will also be undertaken. This will involve mowing the meadow to a height of approximately 50-75mm in late October or November, which will serve to promote wildflower development in the subsequent growing season by removing excessive grass growth, and will leave the sward in an aesthetically satisfactory condition for the winter.

9.26 Following the main annual hay cut, arisings should be left *in situ* for approximately one week after cutting to encourage seed drop, before being baled and removed from the site.

Grassland on Mounds

9.27 Grassland on low mounds within wildflower meadow areas will be managed by annual strimming or mowing undertaken to coincide with the hay cut.

9.28 Due to its relatively droughted and infertile condition, the acid grassland of the tump is unlikely to require very regular cutting, but will be managed by occasional strimming or mowing at a frequency appropriate to the maintenance of relatively open and navigable conditions.

Woodland

9.29 Trees adjacent to the footpath will require ongoing monitoring and management both for health and safety reasons and to maintain access for recreational users. Arisings from any localised tree or vegetation clearance required to maintain the accessibility of the path network should be piled within the woodland to provide refuges for wildlife.

9.30 Areas of woodland which have been thinned in the course of the preliminary implementation phase will subsequently be managed through low intensity coppicing and ongoing clearance of scrub regeneration so that an open understory is maintained.

Hedgerows

9.31 New hedgerows will be subject to an initial pruning in the second winter after planting, in order to promote dense growth.

9.32 Management of hedgerows by mechanical flailing should be undertaken on an approximately triennial rotation. To avoid structural uniformity and the loss of over-wintering invertebrate species, only one side and only certain sections of a hedgerow should be cut in any one year. This will also ensure that at least one side of the hedgerow remains dense and bushy at any one time, to retain habitat suitable for nesting birds.

9.33 Variation in the angle of cutting can be used to promote diversity of structure, by producing hedgerow sections with either an 'A'-shaped profile or straight vertical faces. Standard trees should be allowed to develop within hedgerows - at irregular intervals of 5-10m, and particularly at field corners – in order to promote a softer, more naturalistic rural appearance and provide perches for songbirds.

10. DELIVERY

Introduction

10.1 The arrangements for delivery and future ownership of, and responsibility for the future management of, Wisley Airfield SANG, the detailed costs that will be associated with setting up the SANG and managing it, and the mechanisms through which the required funding will be secured indefinitely, will be secured by means of a S106 Agreement. This section provides a preliminary outline of these arrangements.

Delivery

10.2 Wisley Property Investments will undertake the implementation works set out above in order to deliver Wisley Airfield SANG to the standard envisaged in this Management Plan.

Ownership & Management

10.3 Upon completion of the development, Wisley Airfield SANG will be transferred in phases to either a Community Land Trust, a management company, or Statutory Authority or local Wildlife Trust for management in perpetuity, with a commuted sum or alternative financial arrangement to fund management secured through a Section 106 Agreement or other legal agreement.

Cost Assessment

10.4 A detailed costing assessment has been undertaken to provide an indication of the funding required both to establish Wisley Airfield SANG to the standard envisaged in this Management Plan, and to maintain the SANG in perpetuity.

10.5 Costs have been estimated with reference to guidance sources such as Spon's *External Works and Landscape Price Book*, and to actual costs incurred and estimates received in respect of the creation and management of comparable SANG sites.

Maps

Map 1 Site Location, European Nature Conservation Designations & Component SSSI
Map 2 Existing Habitats
Map 3 SANG Illustrative Masterplan
Map 4 SANG Delivery Phases
Map 5 SANG Layout: Habitats
Map 6 SANG Layout: Infrastructure

MAP 1 Site Location

KEY

- Site boundary
- 2km linear distance from site boundary
- 5km linear distance from site boundary
- Special Protection Area (SPA)

SCALE: 1:45,000 at A3

0 500 1,000 1,500 2,000 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments Ltd

PROJECT: Wisley Airfield

DATE: July 2015

P1467

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MAP 2 Phase 1 Habitats

KEY

- Site boundary
- Woodland
- Scrub
- Semi-improved neutral grassland
- I — Improved grassland
- SI — Poor semi-improved grassland
- Bracken
- Ruderal
- Running water
- Cultivated/disturbed land
- Built areas
- Landfill
- Historic boundary features
- Waterways

SCALE: 1:9,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT Wisley Property Investments Ltd

PROJECT Wisley Airfield

DATE: November 2015

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MAP 3 Site Masterplan

N

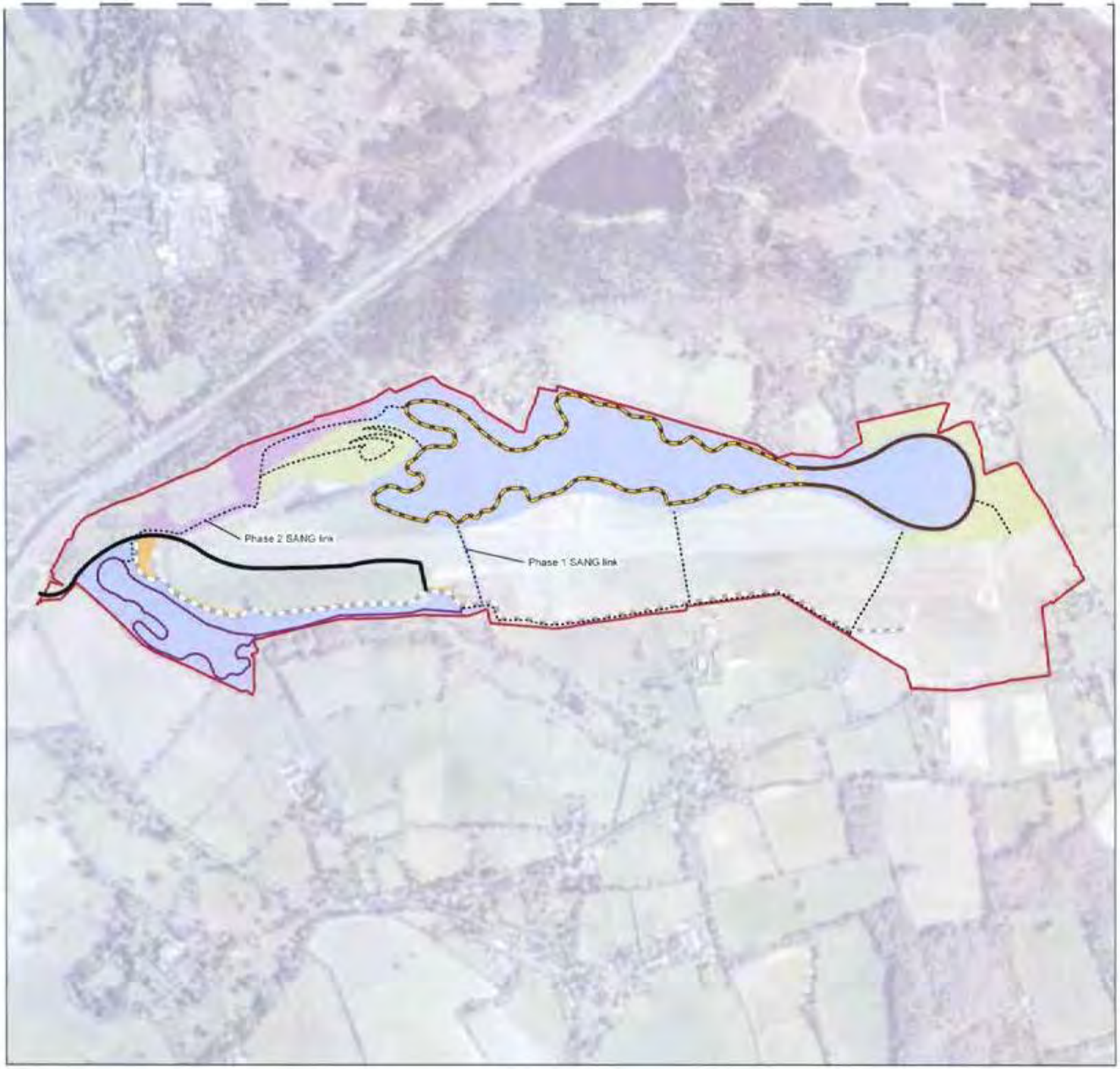
EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments

PROJECT: Wisley Airfield

DATE: September 2015



MAP 4 SANG Phasing

KEY

- Site boundary
- Phase 1 (38.7ha)
- Phase 2 (2.1ha)
- Phase 3 (6.4ha)
- Phase 4 (0.7ha)
- 2.9km Northern SANG circular walk
- 3.9km Northern SANG circular walk
- 1.8km Southern SANG circular walk
- Other footpath links (3.8km)
- Road link from A3 to car park
- Temporary construction access road

SCALE 1:9,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments

PROJECT: Wisley Airfield

DATE: November 2015

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MAP 5 SANG Layout - Existing & Proposed Habitats

KEY

- Site boundary

Existing habitats to be enhanced

- Wet woodland
- Woodland
- Grassland

Proposed habitats

- Proposed woodland
- Trees and scrub
- Dry meadow grassland with scrub
- Short mown grassland
- Orchard
- Turnip
- Pond
- Car park
- New hedgerow
- Swale

SCALE: 1:6,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments

PROJECT: Wisley Airfield

DATE: November 2015

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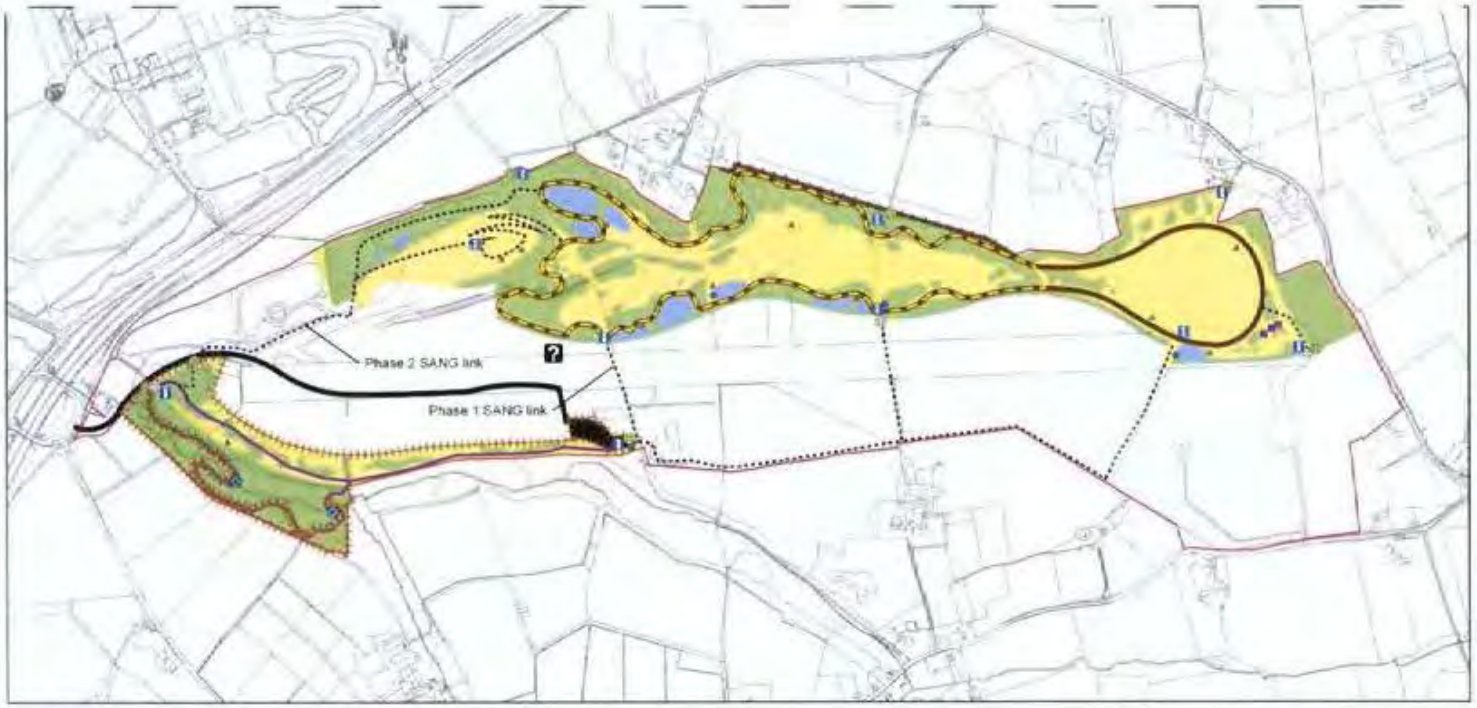

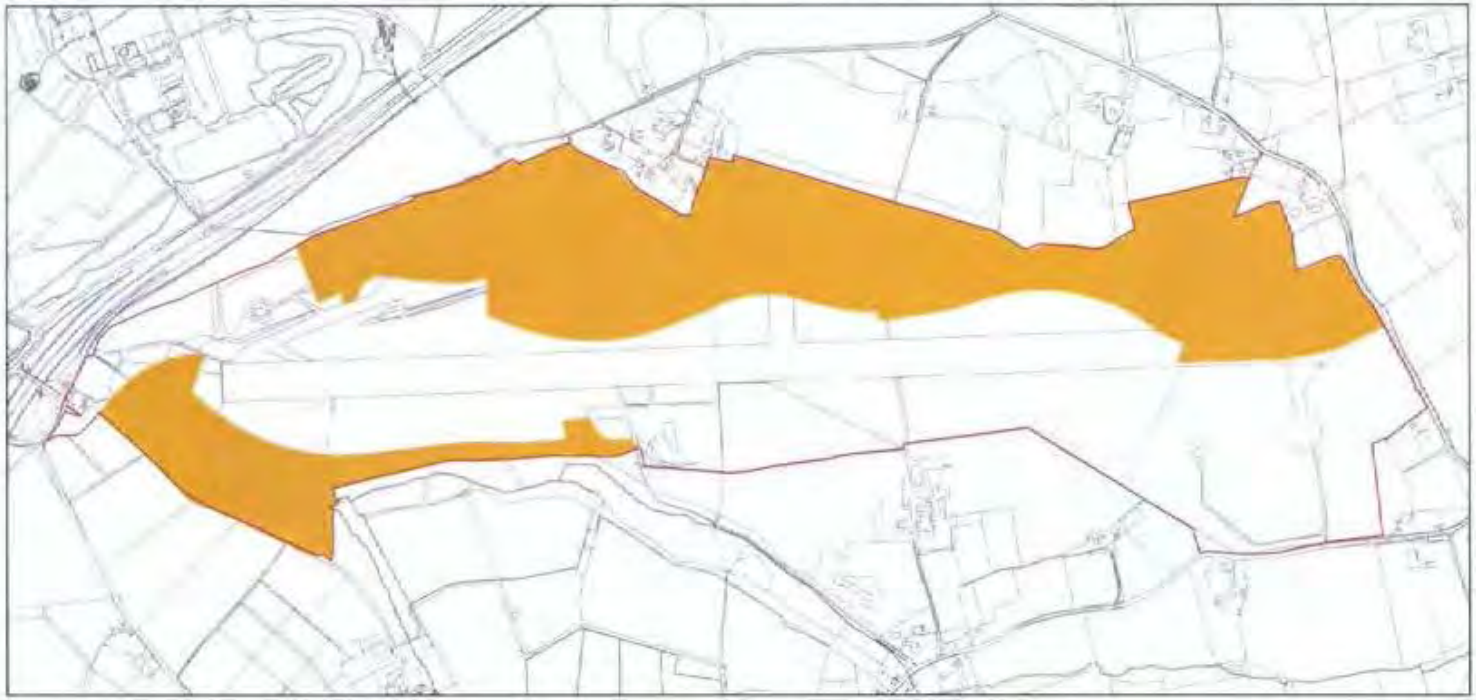

MAP 6 SANG Layout - Proposed Infrastructure

KEY

- Site boundary
- SANG boundary
- Wooded habitats
- Open grassland habitats
- Pond
- Car park
- Road link from A3 to car park
- 2.9km Northern SANG circular walk
- 3.9km Northern SANG circular walk
- 1.8km Southern SANG circular walk
- Other footpath links (3.8km)
- Boardwalk
- Fence
- Hedgerow
- Swale
- Visitor centre
- Kissing gate
- Field gate
- Footbridge
- Information board
- Bench
- Picnic bench
- Bin

SCALE: 1:9,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments

PROJECT: Wisley Airfield

DATE: November 2015

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Appendix 1

Relation of the proposed characteristics of Wisley Airfield SANG to Natural England's 'Guidelines for the Creation of Suitable Alternative Natural Greenspace' (2008)

Must Have Features	Proposals
Adequate Car Parking	A SANG car park providing up to 100 spaces will be located towards the middle of the site strategically located at the furthest point from the SPA. Some spaces will be utilised by staff at the adjacent primary schools but a minimum of 30 spaces identified particularly for SANG use.
It should be possible to complete a circular walk of 2.3-2.5km around the SANGs	More than the minimum 2.3-2.5km circular walk has been accommodated within the proposed SANG area in Phase 1 (total 5.7km). Additional routes will become available in later SANGs and development phases to provide routes up to 9.5km.
Car parks easily accessible and well signed	The car park will be easily accessed off of the Ridgeway Avenue (the main east-west spine road as outlined on the scheme parameters) with signage promoted from the A3 and Ockham Interchange.
Appropriate access points for target user groups	Access points from the SANG car park will be provided via the existing bridleway 544 to the northern SANG area and direct access to footpath 13A to the southern SANG area. Residents will have easy access from the housing areas directly into the SANGs via crossing points over ha-ha's or through proposed green infrastructure corridors between housing blocks. Residents from Elm Corner, Hatchford End, Martyrs Green and Ockham can gain access from existing footpaths that lead through green infrastructure into the SANG.
Safe pedestrian route from nearest car park	The proposed car park will provide safe pedestrian routes into the SANGs via existing PROW.
Circular walks starting and finishing at car park	The northern SANG area is accessed via a SANG link utilising BW544. A shorter circular walk around the southern SANG area starts and stops at the SANG car park and has direct access to open space to exercise dogs.
Perceived by users to be safe, some open walking areas	Will remain predominantly open walking through woodland, orchard and meadow creating different experiences for users.
Paths should be easily used and well maintained but most should be unsurfaced to avoid urban feel	Circular routes will comprise a natural and durable bound gravel surface providing a dry and easily accessible route year round and to attract users to move in an east x west direction rather than heading north into the SPA. Existing PROW will remain un-surfaced as will other walking routes within the SANG. Part of

	the walk through the southern SANG may be boardwalked in places south of the river, where required.
SANGs must be perceived as semi-natural spaces with little intrusion of artificial structures, except in vicinity of car parks. Visually sensitive way markers and benches are acceptable	The SANG areas will be designed as semi-natural spaces and accord with Natural England's guidelines for the creation of SANG. Appropriate natural and 'rustic' furnishings for the SANG will minimise the degree of artificial intrusion.
Variety of habitats	A variety of habitats and visual experiences will be provided through different types of woodland, meadow, short grassland, scrub, orchard and waterbodies supporting wetland habitats.
Unrestricted access, space for dogs to exercise	The SANG will be designed to enable dogs to be exercised freely and safely off the lead, and there will be a range of measures to keep pets contained within the SANG areas to include ha-ha's, wet ditches, planted areas on earth mounds and dog-proof fencing.
Free from unpleasant intrusions	The SANG will not be adversely affected by road noise (discussed further in the Information for HRA report). The transition from housing areas to the SANG will be designed sensitively to prevent urban intrusion.
Clear signposting & advertising Promoted by leaflet or websites	Appropriate timber waymarkers will be installed to indicate walking routes on site and signage will be provided on the A3 and Ockham Interchange to advertise the SANG and car park/cafe. The new SANG and additional offsite walking routes will be advertised via a bespoke website and through dissemination of leaflets.
Desirable Features	**Proposals**
Safe to let dogs off lead between car park and SANG	Generous open areas, to the south of and connected to the car park, will be enclosed by dog proof fencing allowing dogs to be immediately let off the lead. The northern SANG area is not directly connected to the car park but is linked along a short route through green infrastructure.
Gently undulating topography	It is proposed to do some remodelling of the contours to create more visual interest and visual separation between footpaths. There will be no steep inclines within the SANG, except on the rise up the woodland tump which will act as a feature of interest.
Interpretation panels at access points showing site layout and routes	Interpretation boards will be provided at the access points to the SANG, showing the walking routes provided and the features of interest within the site, including seating areas. Timber waymarkers will be provided around the SANG to mark out the walking route.

Open country character with areas of dense trees, scattered scrub or open water	Habitats within the SANG will mostly be open to include grassland; areas of shrubs, scrub and scattered trees; orchard; hedgerow; wet and dry woodland with an open understory; mature standard trees; and waterbodies supporting wetland habitats.
Focal point	A sculptural landform (the woodland tump) will provide a destination on the circular walk and long attractive views from its summit. Several ponds will also provide focal points within the SANG, as will a picnic area adjacent to the orchard.

Appendix 2
Provisional Planting List

Scrub Blocks

Hazel *Corylus avellana*
Hawthorn *Crataegus monogyna*
Holly *Ilex aquifolium*
Crap Apple *Malus sylvestris*
Rowan *Sorbus aucuparia*
Honeysuckle *Lonicera periclymenum*
Wild Privet *Ligustrum vulgare*
Dog Rose *Rosa canina*

Scattered Trees

Pedunculate Oak *Quercus robur*
Hornbeam *Carpinus betulus*
Sweet Chestnut *Castanea sativa*
Wild Cherry *Prunus avium*

Woodland Planting

Pedunculate Oak *Quercus robur*
Sweet Chestnut *Castanea sativa*
Hazel *Corylus avellana*
Hawthorn *Crataegus monogyna*
Holly *Ilex aquifolium*
Rowan *Sorbus aucuparia*
Dog Rose *Rosa canina*
Honeysuckle *Lonicera periclymenum*

Appendix 3
Summary of Actions

Actions		Phase 1	Phase 2	Phase 3	Phase 4	Aftercare	Mainte-nance
Objective 1: *To deliver and maintain an accessible greenspace resource in fulfilment of criteria set out in the Joint Strategic Partnership Board's 'Thames Basin Heaths Delivery Framework' and Natural England's 'Guidelines for the Creation of SANG'*							
1	Installation of SANG infrastructure and site furniture	√	√	√	√		
2	Establishment of surfaced and unsurfaced paths	√	√	√	√		
3	Clearance of encroaching vegetation along walking routes					√	
4	Emptying of dog waste & litter bins at appropriate intervals					√	
5	Periodic monitoring and maintenance of SANG infrastructure					√	
6	Provision of a leaflet about the SANG to all new and existing local residents	√	√	√	√		
Objective 2: *To create new semi-natural habitats in order to achieve biodiversity gains and produce a diverse, naturalistic and attractive landscape*							
7	Pond creation	√	√				
8	Wildflower meadow creation	√	√	√	√		
9	Short sward grassland creation	√					
10	Planting of shrub blocks	√	√	√	√		
11	Planting of scattered trees	√	√	√	√		
12	Woodland planting	√	√	√			
13	Orchard creation			√			
Objective 3: *To restore and enhance existing degraded habitats in order to achieve biodiversity gains and produce a diverse, naturalistic and attractive landscape*							
14	Restorative woodland management	√	√				
15	Invasive species eradication	√				√	

Actions		Phase 1	Phase 2	Phase 3	Phase 4	Aftercare	Mainte-nance
Objective 4: *To manage for both amenity value and biodiversity benefit*							
16	Planting maintenance					√	
17	Replacement planting					√	
18	Monitoring and management of ponds						√
19	Rotational coppicing and pollarding of scrub blocks						√
20	Woodland management: coppicing & clearance of regenerating scrub						√
21	Amenity grassland management: mowing (approximately 8 cuts pa)						√
22	Wildflower meadow management: year one aftercare					√	√
23	Wildflower meadow management: annual hay cut						√
24	Mowing or strimming grassland on mounds (approximately annual)						√
25	Hedgerow management: year 2 pruning					√	
26	Hedgerow management: approximately triennial cutting						√
Objective 5: *To provide opportunities for public engagement and involvement in the management of the SANG*							
27	Regular on-site warden presence						√
28	Pursuit of opportunities for involvement with voluntary working parties						√
29	Pursuit of opportunities for involvement with public such as guided walks						√
Objective 6: *To deliver ecological mitigation and enhancement measures outlined in the Wisley Airfield Environmental Statement*							
30	Provision of log & brash piles	√	√	√	√		
31	Provision of connectivity with other greenspace areas	√	√	√	√		

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25 February 2016

Paul Sherman
Guildford Borough Council
Millmead House
Millmead
Guildford
Surrey
GU2 4BE

By Email Only

Dear Paul,

RE: Wisley Airfield - Letter of Explanation, Revisions to SANG Design

I have been asked by to write to you to provide plans and sections identifying minor revisions to the SANG layout for Wisley Airfield, and to explain how these plans clarify the previously submitted *Information for Habitats Regulations Assessment Report* (ref: P14/67 – 2F, EPR, November 2015) and *Suitable Alternative Natural Greenspace* (SANG) *Outline Habitat Creation & Management Plan* (ref: P14/67 – 3E, EPR, November 2015).

SANG revisions respond to comments made by Natural England in February 2016 and relate to minor realignment of the Northern SANG route and some landscaping improvements, but do not alter the length of the route.

Summary of SANG Design Revisions

The revisions to the SANG design at Sections A-G (see plans at **Appendix 1** for Section locations and further detail) are summarised individually in the text below.

This text provides further clarification to the relevant parts of Section 5.71 *et seq* of the *Information for Habitats Regulations Assessment Report* which detail SANG Design, and Section 5 of the *SANG Outline Habitat Creation & Management Plan* which details SANG Design.

Section A

- The circular walk path has moved northwards, increasing the distance between the circular walk path and the residential development to the south;
- This additional distance has allowed the inclusion of additional scrub and tree planting between the circular walk path and the residential development to the south which will filter views towards the development.

Section B

- The swale to the south of the circular walk has been realigned to increase the distance between the circular walk path and the residential development to the south.
- Additional scrub and tree planting will be included between the southern bank of the swale and the residential development to the south which will filter views towards the development.

Section C

- The circular walk path has moved marginally northwards, increasing the distance between the circular walk path and the residential development to the south;
- Additional scrub and tree planting will be included between the southern bank of the swale and the residential development to the south which will filter views towards the development.

Section D

- The circular walk path has moved northwards, increasing the distance between the circular walk path and the residential development to the south;
- This additional distance has allowed the inclusion of an earth mound with scrub and tree planting between the circular walk path and the residential development to the south which will filter views towards the development.

Section E

- The circular walk path has moved northwards, increasing the distance between the circular walk path and the residential development to the south;
- This additional distance has allowed the inclusion of an earth mound with scrub and tree planting between the circular walk path and the residential development to the south which will filter views towards the development.

Section F

- The circular walk path has moved northwards, increasing the distance between the circular walk path and the residential development to the south.
- This additional distance has allowed the inclusion of additional scrub and tree planting between the circular walk path and the residential development to the south which will filter views towards the development.

Section G

- The circular walk path has moved marginally northwards, increasing the distance between the circular walk path and the residential development to the south;
- Additional scrub and tree planting is included between the circular walk path and the residential development to the south which will filter views towards the development.

Section B

- The swale to the south of the circular walk has been realigned to increase the distance between the circular walk path and the residential development to the south;
- Additional scrub and tree planting will be included between the southern bank of the swale and the residential development to the south which will filter views towards the development.

Section C

- The circular walk path has moved marginally northwards, increasing the distance between the circular walk path and the residential development to the south;
- Additional scrub and tree planting will be included between the southern bank of the swale and the residential development to the south which will filter views towards the development.

Section D

- The circular walk path has moved northwards, increasing the distance between the circular walk path and the residential development to the south;
- This additional distance has allowed the inclusion of an earth mound with scrub and tree planting between the circular walk path and the residential development to the south which will filter views towards the development.

Section E

- The circular walk path has moved northwards, increasing the distance between the circular walk path and the residential development to the south;
- This additional distance has allowed the inclusion of an earth mound with scrub and tree planting between the circular walk path and the residential development to the south which will filter views towards the development.

Section F

- The circular walk path has moved northwards, increasing the distance between the circular walk path and the residential development to the south;
- This additional distance has allowed the inclusion of additional scrub and tree planting between the circular walk path and the residential development to the south which will filter views towards the development.

Section G

- The circular walk path has moved marginally northwards, increasing the distance between the circular walk path and the residential development to the south;
- Additional scrub and tree planting is included between the circular walk path and the residential development to the south which will filter views towards the development.

Maps and Figures

Maps and Figures associated with the *Information for Habitats Regulations Assessment Report* and *Suitable Alternative Natural Greenspace Outline Habitat Creation & Management Plan* have also been updated to reflect the above SANG revisions. Specific Map and Figure changes are detailed below.

Information for Habitats Regulations Assessment Report - Map Revisions:

- **Map 9** - *SANG Layout- Proposed Infrastructure*. New circular walk route shown.
- **Map 11** - *SANG Phasing*. New circular walk route shown.
- **Map 12** - *Offsite PROW Improvements to be Delivered as Part of SPA Impact Avoidance Strategy*. New Circular walk route shown.

For illustrative purposes only, the amended **Map 11** which is attached to this addendum shows both the old and new circular walk routes.

Information for Habitats Regulations Assessment Report - Figure Revisions:

- **Figure 3** – *Illustrative SANG Masterplan* (Davies Landscape Architects). New Circular walk route shown. Figure updated with features as described above.
- **Figure 5** – *Illustration of treatment of narrower section of northern SANG area* (Davies Landscape Architects). Figure updated to illustrate the adjusted route of the circular walk path and to include screen planting between the circular walk path and development to the south.

SANG Outline Habitat Creation & Management Plan - Map Revisions:

- **Map 3** – *Site Masterplan*. New circular walk route shown.
- **Map 4** - *SANG Phasing*. New circular walk route shown.
- **Map 6** – *SANG Layout – Proposed Infrastructure*. New Circular walk route shown.

I trust the above is helpful, but if you have any further queries please do not hesitate to contact me.

Yours sincerely,

Chris Mungo BSc (Hons) MSc MCIEEM AIEMA
Consultant Senior Ecologist, *EPR Ltd*

Maps and Figures

Information for Habitats Regulations Assessment Report - Map Revisions:

Map 9	SANG Layout- Proposed Infrastructure - REVISED
Map 11	SANG Phasing - REVISED
Map 12	Offsite PROW Improvements to be Delivered as Part of SPA Impact Avoidance Strategy - REVISED

Information for Habitats Regulations Assessment Report - Figure Revisions:

Figure 3	Illustrative SANG Masterplan - REVISED
Figure 5	Illustration of treatment of narrower section of northern SANG area - REVISED

SANG Outline Habitat Creation & Management Plan - Map Revisions

Map 3	SANG Masterplan - REVISED
Map 4	SANG Phasing - REVISED
Map 6	SANG Layout – Proposed Infrastructure - REVISED

Appendices

Appendix 1	SANG Character Areas

Information for Habitats Regulations Assessment Report – Map Revisions:

MAP 9 SANG Layout - Proposed Infrastructure REVISED FOR ADDENDUM

KEY

- Site boundary
- SANG boundary
- Wooded habitats
- Open grassland habitats
- Pond
- Car park
- Road link from A3 to car park
- 3.9km Northern SANG circular walk
- 2.9km Northern SANG circular walk
- 1.8km Southern SANG circular walk
- Other footpath links (3.8km)
- Boardwalk
- Fence
- Hedgerow
- Swale
- Visitor centre
- Kissing gate
- Field gate
- Footbridge
- Information board
- Bench
- Picnic bench
- Bin

SCALE: 1:9,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments

PROJECT: Wisley Airfield

DATE: February 2016

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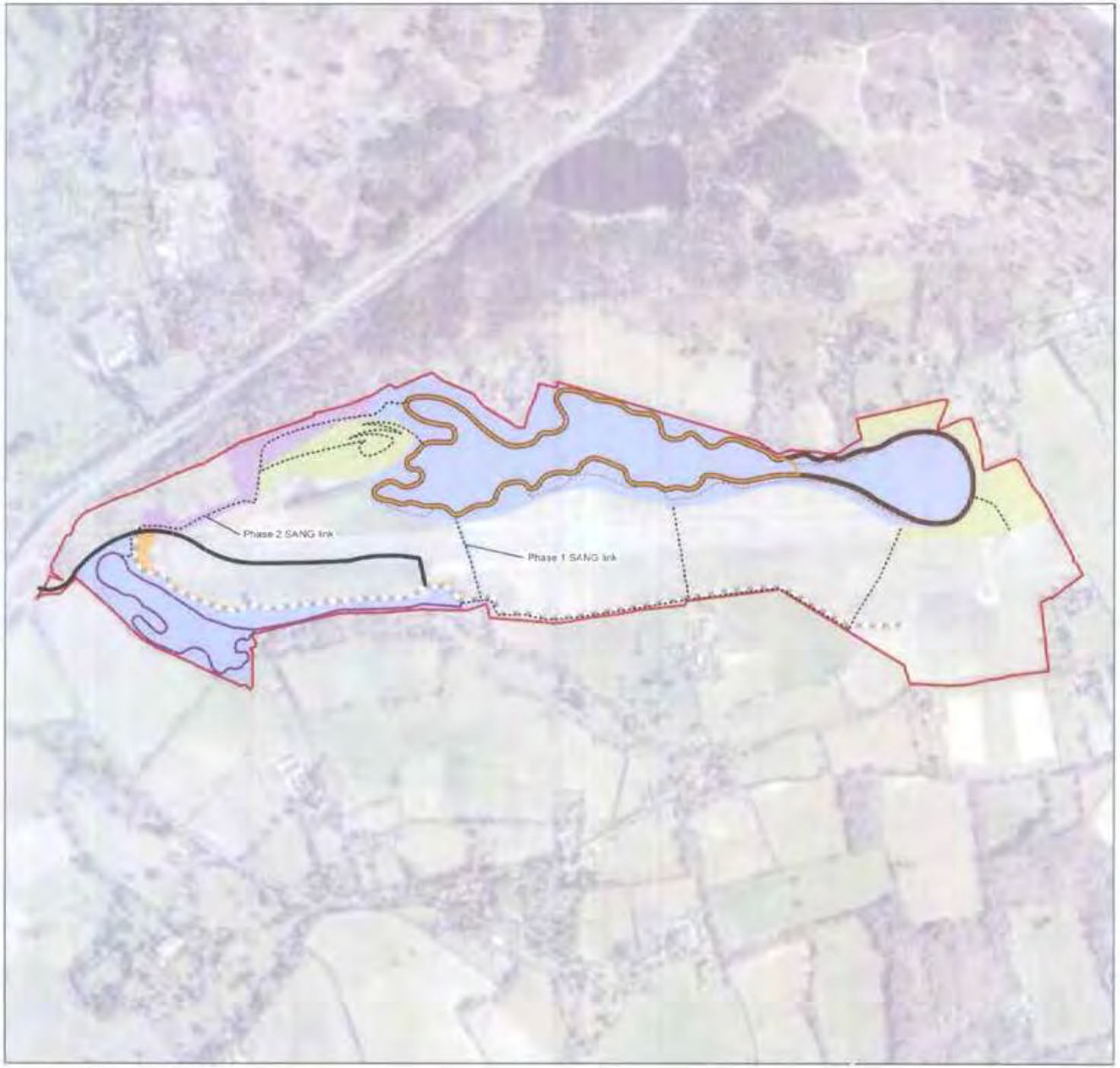

MAP 11 SANG Phasing REVISED FOR ADDENDUM

KEY

- Site boundary
- Phase 1 (38.7ha)
- Phase 2 (2.1ha)
- Phase 3 (8.4ha)
- Phase 4 (0.7ha)
- 3.9km Northern SANG circular walk
- 2.9km Northern SANG circular walk
- 1.8km Southern SANG circular walk
- Other footpath links (3.8km)
- Previous circular walking route
- Road link from A3 to car park
- Temporary construction access road

SCALE: 1:9,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments

PROJECT: Wisley Airfield

DATE: February 2016

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MAP 12 Offsite PROW Improvements to be Delivered as Part of SPA Impact Avoidance Strategy REVISED FOR ADDENDUM

KEY

- Site boundary
- Special Protection Area (SPA)
- SANG boundary
- 3.9km Northern SANG circular walk
- 2.9km Northern SANG circular walk
- 1.8km Southern SANG circular walk
- Other footpath links (3.8km)
- Boardwalk
- Offsite circular recreational route (4.2km)
- Road link from A3 to car park
- Information boards
- Parking
- Cafe
- Wildlife
- Wifi
- Bicycle hire
- Woodland turnp

SCALE: 1:10,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments Ltd

PROJECT: Wisley Airfield

DATE: February 2016

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Information for Habitats Regulations Assessment Report – Figure 3 Revisions:

Boldermere
RHS WISLEY
Elm Corner
Hatchford End
Bridge End Farm
Upper Cottages
Legend
Proposed SANG Circular Route
0m
100m
500m
Information for NE
On behalf of:
Wisley Property Investments LLP
Produced by:
Wisley Airfield, Guildford
SANG Illustrative Masterplan
February 2018
1:7500 @ A3
N/A

Information for Habitats Regulations Assessment Report – Figure 5 Revisions:

Section A - AA: Northern SANG

Section Location Plan (NTS)

Information for NE	
On behalf of: Wisley Property Investments LLP	Wisley Airfield, Guildford
Produced by:	Northern SANG Area - Rev A
	Date: February 2015 Scale: 1:250 @ A3
	Revision Number: N/A

SANG Outline Habitat Creation & Management Plan - Map Revisions

MAP 3 Site Masterplan REVISED FOR ADDENDUM

N

EPR

Ecological Planning & Research

CLIENT Wisley Property Investments

PROJECT Wisley Airfield

DATE: February 2016

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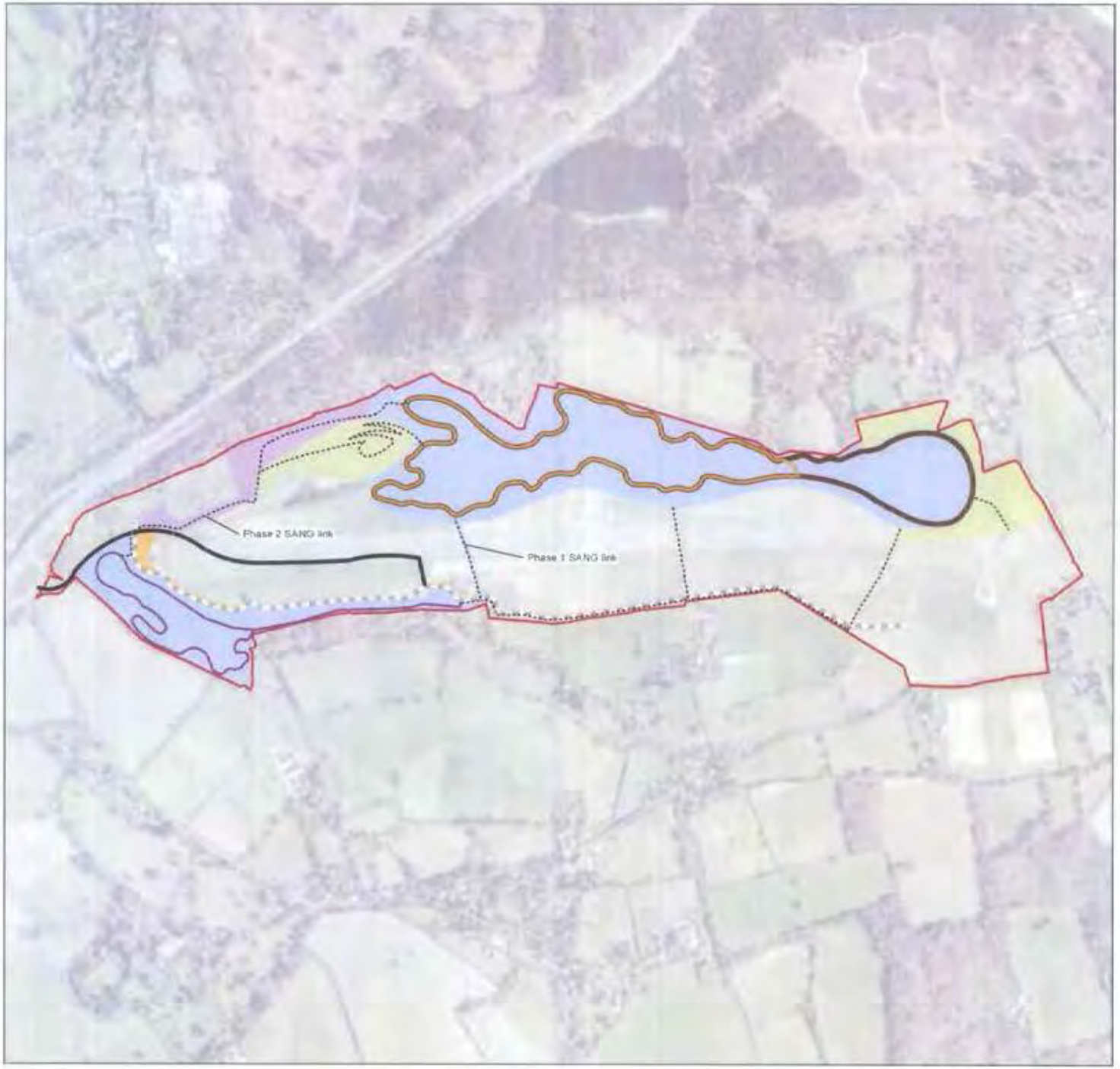

MAP 4 SANG Phasing

KEY

- Site boundary
- 3.9km Northern SANG circular walk
- 2.9km Northern SANG circular walk
- 1.8km Southern SANG circular walk
- Other footpath links (3.8km)
- Phase 1 (38.7ha)
- Phase 2 (2.1ha)
- Phase 3 (8.4ha)
- Phase 4 (0.7ha)
- Road link from A3 to car park
- Temporary construction access road

SCALE: 1:9,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT Wisley Property Investments

PROJECT Wisley Airfield

DATE February 2016

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MAP 6 SANG Layout - Proposed Infrastructure REVISED FOR ADDENDUM

KEY

- Site boundary
- SANG boundary
- Wooded habitats
- Open grassland habitats
- Pond
- Car park
- Road link from A3 to car park
- 3.9km Northern SANG circular walk
- 2.9km Northern SANG circular walk
- 1.8km Southern SANG circular walk
- Other footpath links (3.8km)
- Boardwalk
- Fence
- Hedgerow
- Swale
- Visitor centre
- Kissing gate
- Field gate
- Footbridge
- Information board
- Bench
- Picnic bench
- Bin

SCALE 1:9,000 at A3

0 100 200 300 400 Metres

N

EPR

Ecological Planning & Research

CLIENT: Wisley Property Investments

PROJECT: Wisley Airfield

DATE: February 2016

P14-67

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Annex 1
SANG Character Areas

Typical Section Location Plan (NTS)

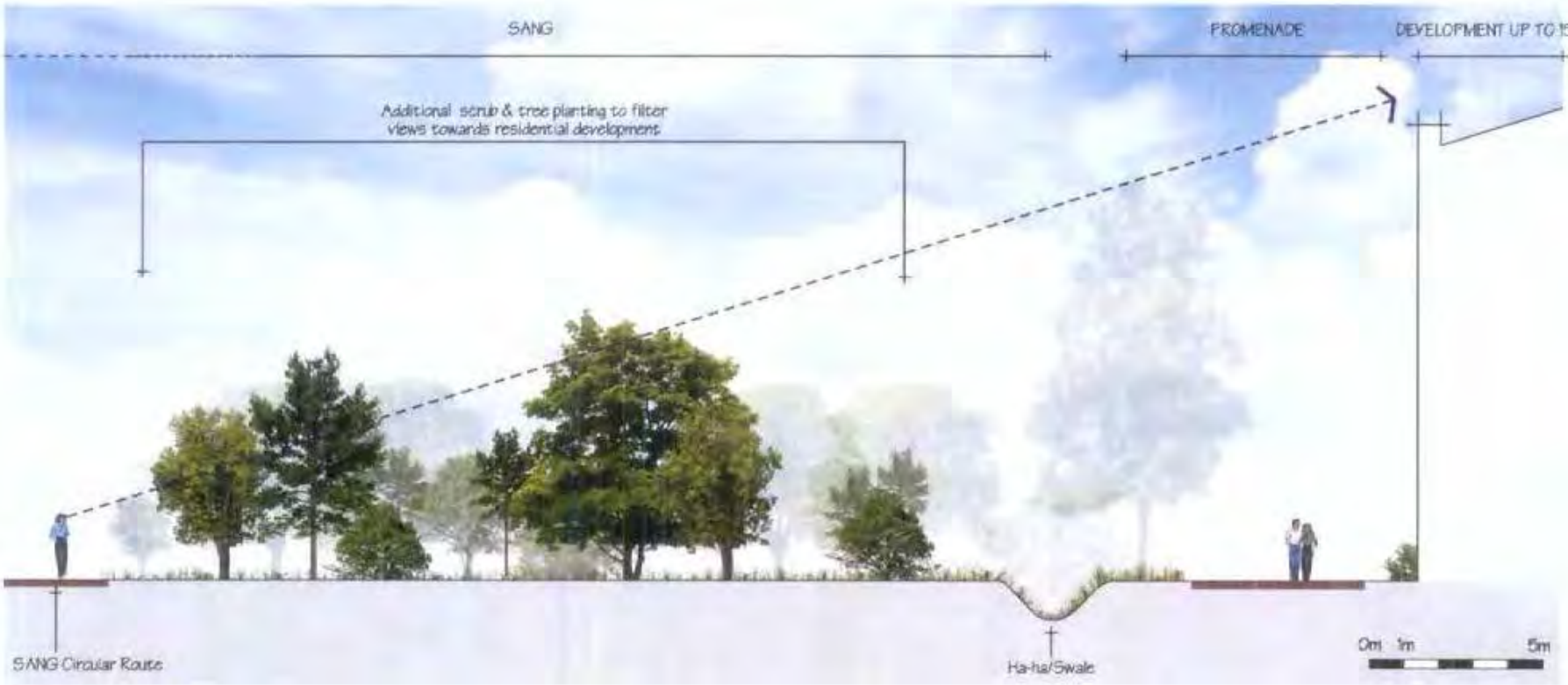
Legend

Proposed SANG Circular Route

Existing SANG Circular Route

FOR DISCUSSION ONLY

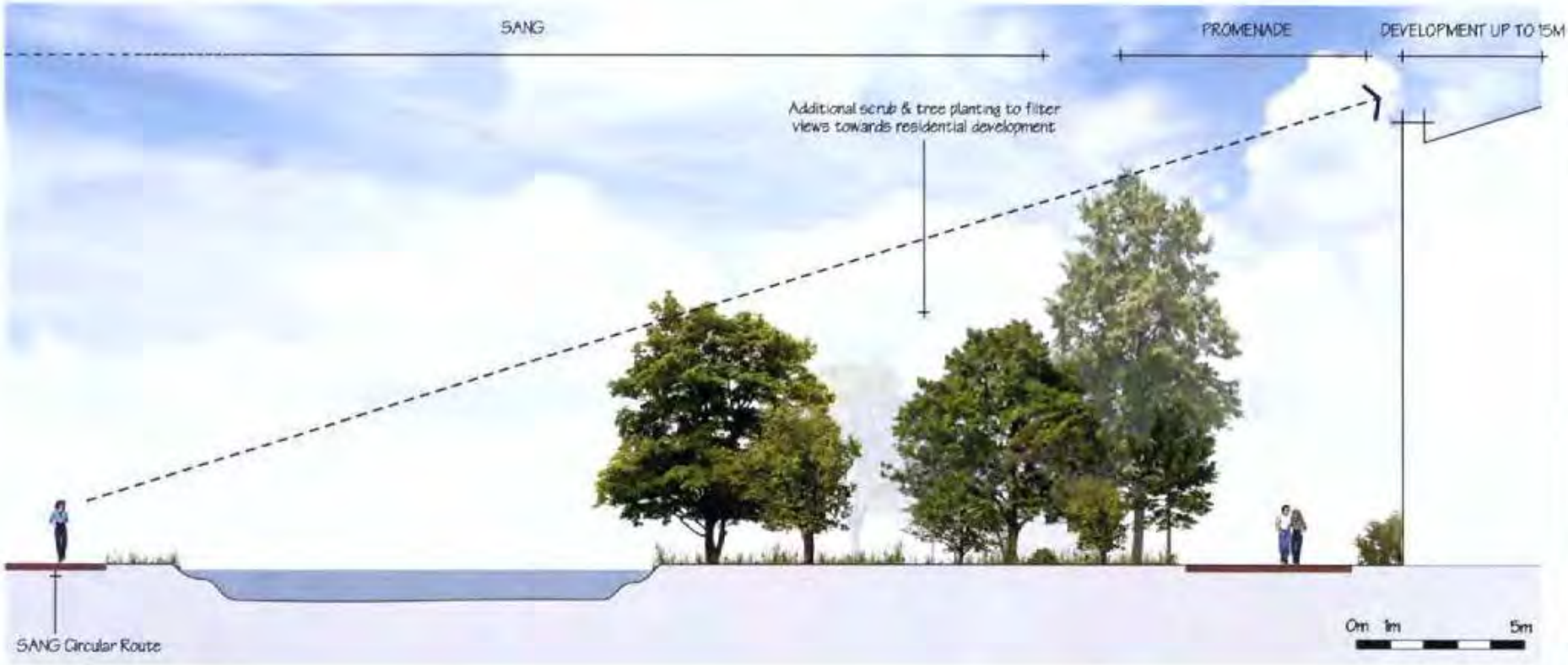
Information for NE	
On behalf of: Wisley Property Investments LLP	Wisley Airfield, Guildford
Produced by:	SANG Character Areas
	Date: February 2016 Scale: NTS
	Drawing number: N/A



Section A - a
1:125 @ A3

FOR DISCUSSION ONLY

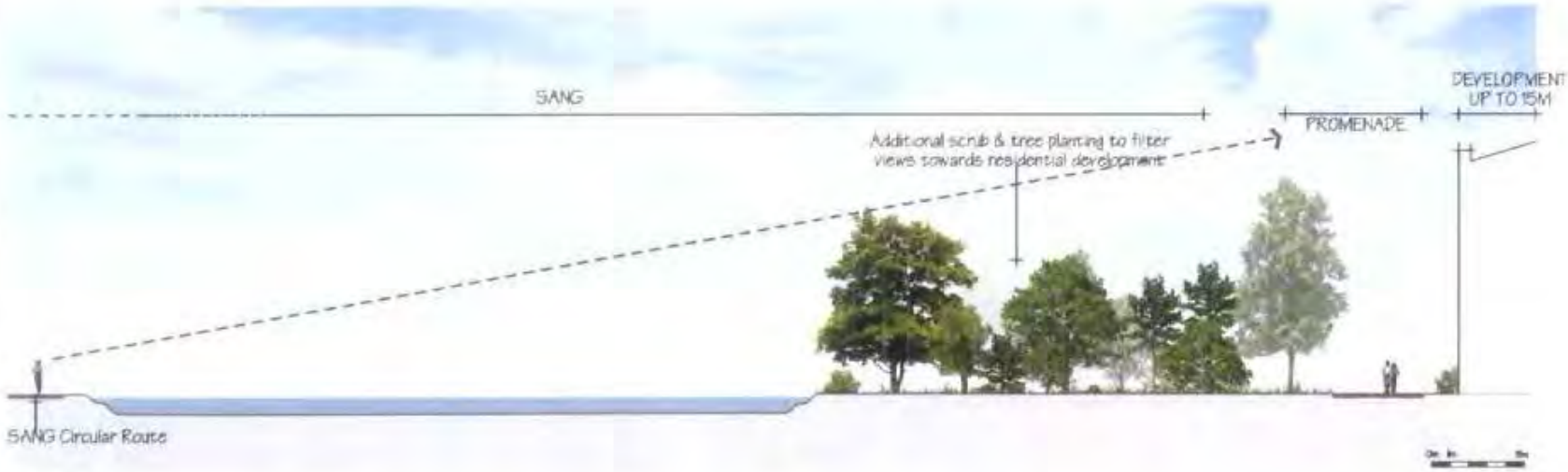
Information for Mr	
On behalf of: Wisley Property Investments LLP	Wisley Airfield, Guildford
Produced by:	Section A - a
	February 2015 scale: 1:125 @ A3
	drawing number: N/A



Section B - b
1:125 @ A3

FOR DISCUSSION ONLY

Information for NE	
On behalf of: Wisley Property Investments LLP	Wisley Airfield, Guildford
Produced by:	Section B - b
	Date: February 2018 Scale: 1:125 @ A3
	Drawing number: N/A



Section C - c
1:250 @ A3

Section D - d
1:250 @ A3

FOR DISCUSSION ONLY

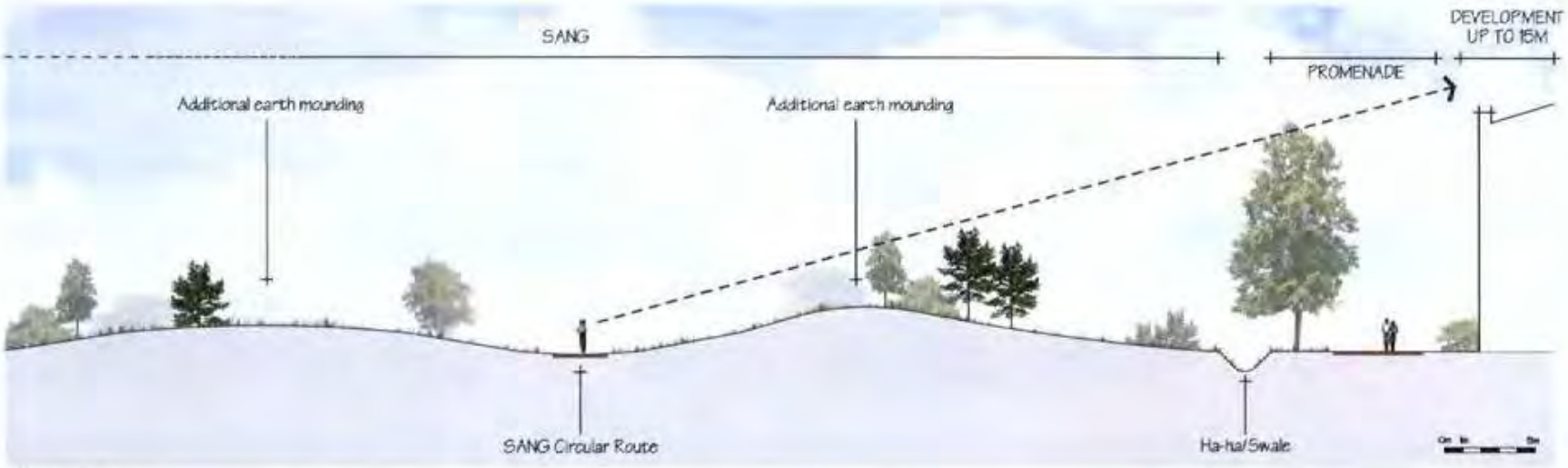
On behalf of:
Wisley Property Investments LLP

Produced by:

Wisley Airfield, Guildford

Sections C - c & D - d

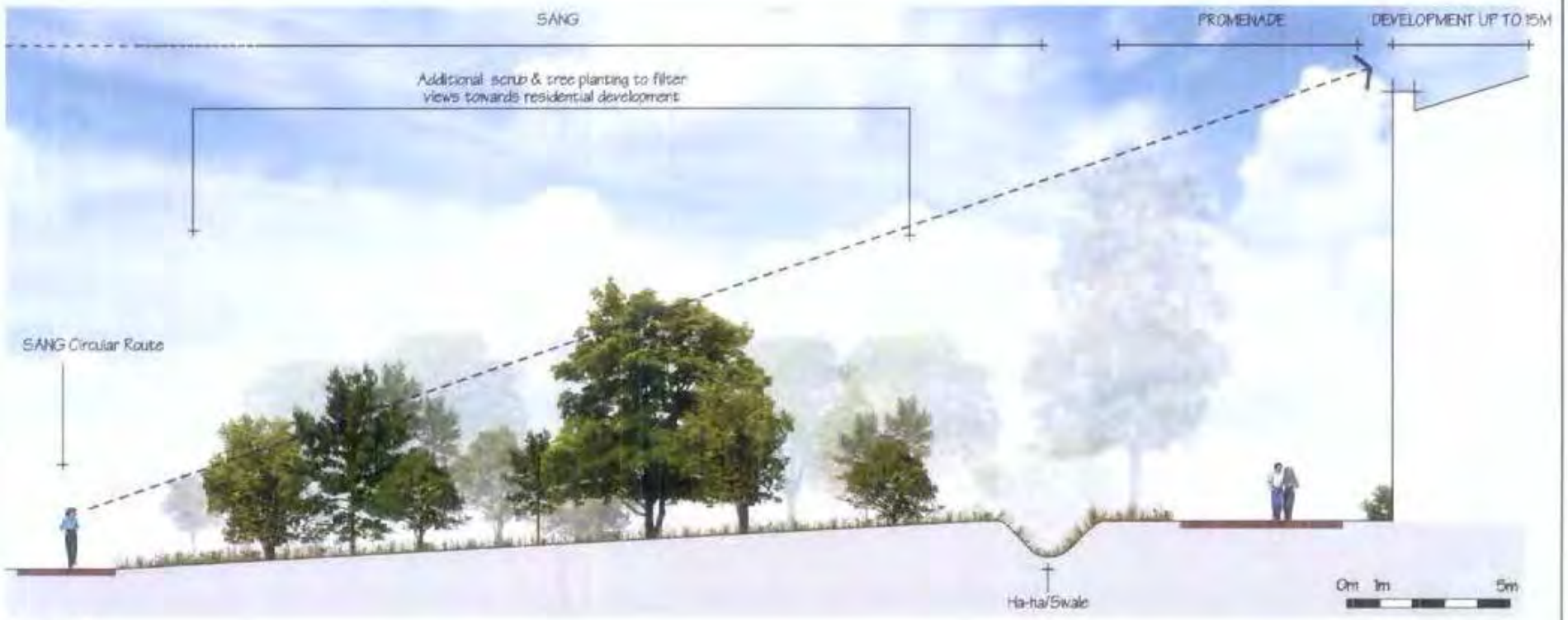
Date: February 2016 Scale: 1:250 @ A3



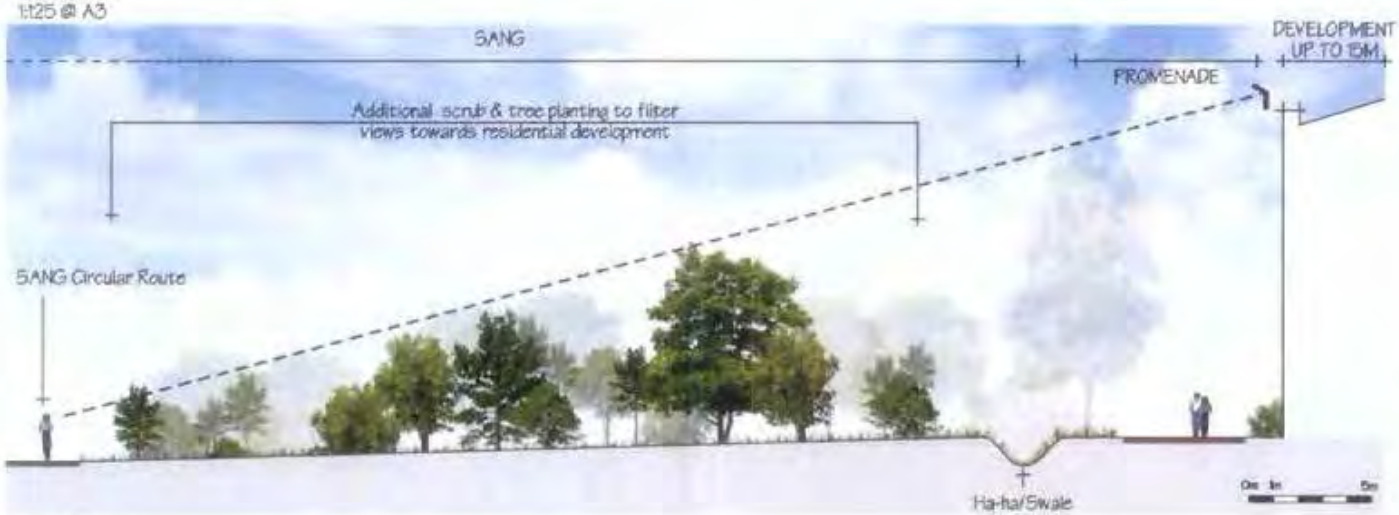
Section E - e
1:250 @ A3

FOR DISCUSSION ONLY

Information for NE	
On behalf of: **Wisley Property Investments LLP**	Project **Wisley Airfield, Guildford**
Produced by:	Drawing Title **Secion E - e**
	Date: February 2015 Scale: 1:250 @ A3
	Drawing number: N/A



Section F - f
1:125 @ A3



Section G - g
1:200 @ A3

FOR DISCUSSION ONLY

Information for NE

On behalf of:
Wisley Property Investments LLP

Produced by:

Project:
Wisley Airfield, Guildford

Drawing title:
Sections F - f & G - g

Date: February 2016 Scale: As Shown

Drawing number: N/A