Development Management Plan Proposed Submission Document

Habitats Regulations Assessment

Screening and Appropriate Assessment Report

October 2017 **Updated September 2018**

1. Contents

1. Introduction

The requirement to undertake Habitats Regulations Assessment

1.1 The European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna (the 'Habitats Directive') sets out the means to protect habitats and species of European importance through the establishment and conservation of a network of sites known as the 'Natura 2000' network. These include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)[1]. It is also Government policy for sites designated under the Convention on Wetlands of International Importance (Ramsar sites) to be treated as having equivalent status to Natura 2000 sites. These are sites of exceptional importance in respect of rare, endangered or vulnerable natural habitats and species within the European Community. In this report SACs, SPAs and Ramsar sites will be collectively referred to as 'Natura 2000' sites.

1.2 A Habitats Regulations Assessment (HRA) is required of land use plans under the Habitats Directive, as transposed into UK law by the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017).[2]

1.3 The purpose of a HRA is to assess the implications of a plan, both individually, and in-combination with other plans or projects, on these Natura 2000 sites. The Habitats Directive applies the precautionary principle to Natura 2000 sites. In normal circumstances, a land use plan can be brought into effect only after having ascertained that it will not adversely affect the integrity of a Natura 2000 site either alone or in-combination with other plans.

What does this report do?

1.4 The Reigate & Banstead Development Management Plan 2018 - 2027 (referred from here on as the DMP) was submitted to the Secretary of State for Housing, Communities and Local Government for independent examination on 18th May 2018. The DMP is Part 2 of the updated Local Plan Framework (LPF). Part 1 of the LPF, the Core Strategy, was adopted in July 2014 and includes polices that define the overall scale and location of growth in the borough until 2027.

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[1] SACs regard the conservation of Natural Habitats and Species first adopted (1992). SPAs (and Ramsar) sites regard the protection of Wild Birds first adopted (1979).

[2] The Conservation of Habitats and Species Regulations 2017 consolidates the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulation came into force on 30th November 2017.

1.5 This HRA report seeks to determine whether the proposed policies and development site allocations in the submitted DMP have any significant adverse impacts on protected European habitats or species, either alone or in-combination with other plans or proposals.

1.6 This report updates two interim HRA (Screening Assessments) which were prepared for the Regulation 19[3] process. The first was published in January 2018 for public consultation which was held between January and May 2018. The second was published in May 2018 and accompanie the DMP submitted for public examination. These HRA reports had been prepared before the recent changes in Case Law which are discussed in the next Chapter (2).

1.7 Natural England requested that the Council revise the HRA reports to ensure compliance to this recent case law. As such this report incorporates both a Screening Assessment and Appropriate Assessment (refer to 2.2 – 2.9). This report is therefore referred to as the Habitat Regulations Assessment/Habitat Assessment (herein the HRA/AA).

1.8 A "Statement of Common Ground" between Natural England and Reigate & Banstead Borough Council accompanies this report. This agreement has been produced to affirm that there are no outstanding issues or areas of disagreement between Reigate & Banstead Borough Council (the Council) and Natural England that have not been resolved in relation to the latter's representations to the HRA/AA that accompanies the DMP.

Consultation

1.9 The Habitats Regulations require the plan making/competent authority to consult the appropriate nature conservation statutory bodies. Comments from the statutory nature conservation bodies (Natural England and Environment Agency) were received on the HRA/AA Screening Report (2014), the SA Scoping Report (June 2016), and the Initial SA Report (June 2017). These comments and any advice provided have been taken forward in the iterative HRA/AA work documented in this Report.

1.10 The Habitats Regulations leave consultation with other bodies and the public to the discretion of the plan making authority. In addition to the statutory consultation undertaken with the appropriate nature conservation bodies, the HRA/AA Report was available for wider public Regulation 19 consultation alongside the Pre-Submission DMP. Only comments from Natural England were received with regard to the HRA/AA.

[3] Town and Country Planning Act (Local Planning) (England) Regulations 2012

2. Methodology

2.1 Currently, there is no formal central Government guidance on how to conduct a HRA/AA. There is general guidance from the European Commission[4]. Additionally the former Department of Communities and Local Government (DCLG) released a consultation paper on the Appropriate Assessment of Plans in 2006[5]. This available guidance has directed this HRA/AA.

2.2 European guidance on HRA/AA recommends a process of up to four stages. These are summarised in Figure 1.

Figure 1: Stages in Habitats Regulations Assessment

Stage	Summary
Stage 1	Screening Stage – 'Likely Significant Effects' test. It is necessary to determine whether the plan is directly connected with or necessary to the management of that European site. If it is not, determining whether the plan in itself or 'in combination' with others is likely to have a significant effect on a European site. If the answer is 'yes' then the adverse effects on the integrity of each European site must be considered via 'Appropriate Assessment' at Stage 2 below.
Stage 2	Appropriate Assessment – 'Integrity' test. It is necessary to determine whether, in view of the site's conservation objectives, the plan in itself or 'in combination' would have an adverse effect (or risk of this) on the integrity of the site. If not, the plan can proceed.
Stage 3	Assessment of alternative solutions Where it is assessed that there may be an adverse impact (or risk of this) on the integrity of the site, there should be an examination of the alternatives.
Stage 4	Assessment where no alternative solutions remain and where adverse impacts remain.

2.3 This HRA incorporates both a Screening Assessment (Stage 1) and Appropriate Assessment (Stage 2) (and is referred to here on in as the HRA/AA). This is in part necessary due to recent Case Law.

[4] European Commission (2001): Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive.
[5] DCLG (2006) Planning for the Protection of European Sites, Consultation Paper

Recent Case Law and Legal Opinion

CJEU Judgments on HRA Mitigations

2.4 The Court of Justice of the European Union (CJEU) issued the 'Sweetman judgment'[6], on the 12 April 2018. This ruled that Article 6(3) of the Habitats Directive must be interpreted as meaning that mitigation measures (referred to in the judgment as measures which are intended to avoid or reduce effects) should be assessed within the framework of an Appropriate Assessment. It is therefore no longer permissible to take account of measures intended to avoid or reduce the harmful effects of the plan or project on a European site at the screening stage.

2.5 This is contrary to previous case law (most notably the 'Dilly Lane decision'[7] case) which recognised that where mitigation measures could be identified at an early stage and integrated in the plan proposals to deal with a likely significant effect, the competent authority undertaking a HRA could conclude that a plan overall would not have a likely significant effects on a European site if these mitigation measures were to be implemented without the requirement for an Appropriate Assessment (Stage 2).

2.6 A further (preliminary) ruling from the CJEU on Article 6[8] of the Habitats Directive was made on 25th July 2018 in the Grace & Sweetman v An Bord Pleanala case[9]. This judgement supports previous case law[10] on the distinction between mitigation and compensation at the appropriate assessment stage of HRAs. This ruling does not necessitate any changes to domestic law/practice around HRAs as such; it is referenced here for completeness.

Case Law and Legal Opinion on Air Quality Monitoring

2.7 A high court ruling on 20th March 2017, referred to as the 'Wealden Judgment'[11] found that traffic increases and subsequent air pollution on roads within 200m of an Natura 2000 require an in-combination approach that considers the development of nearby authorities. If the combined effects of development leads to the increase of traffic of more than 1,000 cars a day, further work is required (Appropriate Assessment) to determine whether there is likely to be an

[6] People over Wind & Sweetman v Coillte Teoranta Case C-323/17
[7] Hart District Council v Secretary of State for Communities & Local Government
[8] Article 6(3)/6(4)
[9] Case C-164/17 Grace & Sweetman v An Bord Pleanala
[10] 21 July 2016, Orleans and Others, C-387/15 and C-388/15, EU:C:2016:583
[11] Wealden District Council v Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority [2017] EWHC351 (Admin)

adverse effect on the integrity of the Natura 2000 site. This could be through traffic and air quality ecological modelling.

2.8 It should be noted that Advocate General Kokott (for the Court of Justice of the European Union) delivered an opinion on 25th July 2018 in regard to two joined cases in the Netherlands.[12] The cases related to nitrogen deposition from agriculture and impact to Natura 2000 sites. At this time it has not been before the EUCJ[13], and therefore not legally binding. However it is still prudent to consider whether the approach in this HRA/AA belies a conflict with Kokott's opinion.

2.9 The Council therefore sought legal opinion on the matter which concluded that for the HRA/AA to be legally robust, in light of Kokott's opinion regarding air quality, and all relevant Case Law.

Structure of this report

2.10 The rest of this report is structured as follows:

a. **Section 3**: The Local Plan Framework: summarises the Core Strategy and Development Management Plan in relation to the HRA/AA.

b. **Section 4**: The Development Management Plan HRA/AA Screening Assessment Stage 1: summarises the outcome of the DMP screening assessment.

c. **Section 5**: The Development Management Plan HRA/AA Appropriate Assessment Stage 2: summarises the outcomes of the DMP Appropriate Assessment

d. **Section 6**: Next Steps: sets out the next steps for the Council.

[12] Case C-293/17 Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu four farms have permits for the period from 1989 to 2015, setting out the number and type of livestock per stable, the stable type and the associated emissions factor, Case C-294/17 concerns the appeals lodged by the environmental protection association Stichting Werkgroep Behoud de Peel against six permits for different farms in the province of North Brabant which cause nitrogen deposition inter alia in the Natura 2000 sites of Groote Peel (NL 3009012) and Deurnsche Peel & Mariapeel (NL 1000026).
[13] European Union Court of Justice

3. The Local Plan Framework

3.1 The Development Management Plan (DMP) now being prepared by the Council follows on from the Core Strategy, adopted in 2014. Together they form the Local Plan Framework. The purpose of the DMP is to deliver the Core Strategy principles in detail. The policies and site allocations that are made through the DMP will therefore broadly align with the policies and overall spatial strategy set out in the Core Strategy. For that reason, the findings of the Core Strategy HRA/AA Screening Assessment are relevant to this DMP HRA/AA Screening Assessment. However, although the potential impacts identified previously have been used to inform the screening of DMP, proposed policies and site allocations, it is still necessary to screen the DMP as a standalone assessment given it provides the detailed approach.

3.2 The DMP provides the detailed policies and site allocations to deliver the Core Strategy. The DMP is accompanied by a Policies Map, showing designations and development allocations.

3.3 The DMP has been prepared by the Council taking into account a robust evidence base and the outcomes of the Regulation 18 consultation held in 2016. Following Regulation 19 consultation, the DMP was submitted for examination process on 18th May 2018.

3.4 The DMP and the supporting Policies Map include the following main aspects:

a. Policies to guide decision making on planning applications
b. Designation boundaries, within which particular policy approaches will be applied
c. Development allocations for housing, employment, retail and mixed use development
d. Areas of 'safeguarded land' which will be considered for development in the next plan period through a review of the Local Plan.

3.5 The content of the DMP is guided by the proposed objectives set out in Figure 2. The 23 objectives form the context for the policies and development allocations.

Figure 2 DMP objectives

PE1: Safeguard existing employment land and premises to ensure that there is adequate space for businesses to locate in the borough
PE2: Provide flexibility for local businesses to start up, grow, diversify and prosper
PE3: Help new development to deliver jobs and skills benefits for local people

PE4: Protect the vitality and viability of our town centre shopping areas
PE5: Protect the viability of smaller scale but vital local shopping areas
PE6: Ensure that both town and local centres are resilient and able to respond to future changes
SC1: To ensure that new development makes the best use of land whilst also being well designed and protecting and enhancing local character and distinctiveness
SC2:To ensure an appropriate mix of housing types and sizes, offering a good standard of living to future occupants
SC3: To minimise the impacts of development, and the development process, on local residents and local amenity
SC4: Protect the most valuable open space within the urban areas
SC5: Encourage the provision of open space as part of new developments, and where appropriate new outdoor sport and recreation provision
SC6: Require new developments to provide adequate parking, whilst recognising the need to encourage sustainable transport choices, particularly in the most accessible locations
SC7: Ensure new developments are served by safe and well designed access for vehicles, pedestrians and cyclists
SC8: Encourage new development to incorporate passive and active energy measures and climate change resilience measures and renewable energy technologies
SC9: Direct development away from areas at risk of flooding, and ensure all developments are safe from flood risk and do not increase flood risk elsewhere or result in a reduction in water quality
SC10: Ensure new development protects, and enhances wherever possible, the borough's landscapes and biodiversity interest features, providing the highest degree of protection to internationally and nationally designated areas
SC11: Maximise the contribution of new development to a comprehensive green infrastructure network across the borough
SC12: Control development in the Green Belt to safeguard its openness, and where possible enhance its beneficial use
SC13: Conserve and enhance designated heritage assets across the borough, supporting their continuing viable use and cultural benefits
PS1: Identify a local target for gypsy, traveller and travelling showpeople sites, and allocate sites to achieve this target
PS2: Ensure future cemetery and/or crematorium provision is located consistent with sustainability principles
PS3: Allocate sites for development across the borough consistent with the Core Strategy and sustainability principles
PS4: Plan for improvements to existing infrastructure and services, and/or the provision of new infrastructure and services, to meet the needs created by new development.

3.6 The levels of growth proposed in the adopted Core Strategy and the DMP are set out in Figure 3. The only site not specifically envisaged at the time the Core Strategy was prepared is a large scale employment development proposal identified in the south of the borough (HOR9).

Figure 3: The levels of growth proposed in the Part 1: Core Strategy & Part 2: Development Management Plan

Topic	Core Strategy Plan/proposal	DMP update	Notes
Housing scale	6,900 homes between 2012 and 2027 (460dpa)		Alternative scales of housing growth tested at earlier stages of plan formulation
Housing location	Urban sites Area 1: 930 homes Area 2a: 1330 homes Area 2b: 280 homes Area 3: 2440 homes		Plan looks sequentially to urban sites first. Urban provision in Horley includes 2 new neighbourhoods
	Sustainable Urban Extensions Around Horley: 200 homes East Redhill/Merstham: 500-700 homes South/South West Reigate: 500-700 homes		Monitoring targets and triggers will ensure land only released for sustainable urban extensions if insufficient urban land supply. Areas of land within proximity of the Mole Gap to Reigate Escarpment screened out
Employment scale and location*	Approx. 46,000sqm Additional Employment Floorspace Includes: 2,000sqm in the North Downs Area; 20,000sqm in Redhill and Reigate (of which 7,000sqm in Redhill town centre); 24,000sqm in Area 3		Focus on accommodating additional floorspace in town centres and existing industrial estates.
Employment scale and location		Policy HOR9: Horley Strategic Business Park Indicative quanta: • Up to 200,000sqm of B1 floorspace, predominantly focusing on B1(a), B1(b) and B1(c) including floorspace for new incubator/start-up units/Small Medium Enterprise • Up to 10,500 sqm of community facilities, including A1 (predominantly convenience shops); A3 (Food and Drink); D1 (Children's Nursery) and/or D2 (Gymnasium).	The site is allocated for : A mix of business space for strategic employment purposes and suitable for a range of occupiers within Class B1 uses A complementary range of commercial, retail and leisure facilities to serve and facilitate the main business use of the site At least 5 ha of new high quality public open space, including parkland and outdoor sports facilities

Retail scale and location*	25,800sqm comparison floorspace 11,700sqm convenience floorspace	Comparison floorspace: Approx. 12,900 sqm Convenience floorspace: No significant quantitative need	Majority of retail growth focused in Redhill Town Centre, with more limited growth in other centres to retain a constant market share.
Major infrastructure	Gatwick Airport		Proximity to Airport means good national/ international transport links, but also brings problems such as traffic congestion, noise and air pollution that need to be managed.

* subject to regular monitoring of demand levels

Core Strategy Habitat Regulation Assessment findings

3.7 The potential impacts of the Core Strategy on the identified Natura 2000 sites were explored in detail at the Appropriate Assessment stage of the Council's HRA. This included looking at technical data about the sensitivities of each site, evidence about the likely scale of impact, and the avoidance measures that were being proposed to address any potential impact, and was updated as Core Strategy policies and proposals were developed. Figure 4 summarises the assessment of key potential impacts on Natura 2000 sites.

3.8 It is important to note that the Core Strategy HRA was prepared prior to the 'Wealdon Judgement.' The Council followed the methodology recommended by Natural England at the time to screen the relevant road links. Since then, and following HRA/AA work and the progressing of neighbouring authorities, this position has been revised and further modelling work has been undertaken, following a more up-to-date methodology.

Figure 4: Key potential impacts identified in the screening of the Core Strategy

Potential impact	Threats	Proposed avoidance measures	Conclusions
Mole Gap to Reigate Escarpment SAC			
Recreational disturbance	Possible increase in visitor numbers arising from new housing proposed in RBBC and MVDC Core Strategies	Positive visitor management and access management Site management around honeypot sites Encouraging visitors to alternative sites in the vicinity of the SAC Provision of new local open space as part of new developments and/or enhancement of existing alternative recreation sites. Developer contributions HRA/AA assessment of projects Green infrastructure provision Monitoring	Recreational pressure created by the proposals in the Core Strategy in combination with other plans/projects will be minimal in relation to large numbers of visitors who come from outside the borough. The implementation of avoidance measures should result in no adverse impact on the integrity of the SAC.
Maintenance (and cessation) of	Possible increased public objection to	Improved interpretation and continuing joint working in	With proposed avoidance measures,

grazing	stock fencing. Possible disturbance to grazing animals due to increased visitor numbers Competition for financial resources for grazing/stock fencing	relation to visitor management methods. Improved visitor facilities in conjunction with grazing infrastructure. Provision of new local open space as part of new developments and/or enhancement of existing alternative recreation sites.	the Core Strategy will not have an adverse effect on grazing within the SAC.
Air quality	Air pollution generated regionally and locally may contribute to eutrophication and/or ground level ozone.	Promote modal shift from the car to more sustainable forms of transport Ensure that opportunities for the use of public transport exist near large development sites Model the transport effects of larger proposed developments to enable air pollution impacts to be investigated Implement more green travel plans Design sustainable transport facilities into new development Create sustainable transport routes and links between existing facilities.	Additional air pollution created by the proposals contained in the Core Strategy will be minimal. The Core Strategy will not have an adverse impact on the integrity of the SAC in this way. The Council will assess significant localised effects at a more local level for example in relation to site allocations
Protection of European Protected Species Bechstein's bat (Myotis bechsteinii)	Potential impact of development, climate change and urbanisation impacts on foraging and roosting sites and associated severance of bat flight paths between SAC and surrounding areas.	Policies to safeguard (or replace) mature trees, woodlands, hedgelines and watercourses Measures to mitigate the impacts of climate change Recreational disturbance avoidance measures will also limit wider urbanising effects.	Policies contained in the Core Strategy should result in a net gain in biodiversity and not result in harm to bats or other species.
Ashdown Forest SAC and SPA			
Recreation disturbance	Possible increase in visitor numbers arising from new housing proposed in RBBC	Provision of new local open space as part of new developments and/or enhancement of existing alternative recreation sites. Consultation with Wealden DC and East Sussex CC on Core Strategy Joint monitoring and management of recreational pressures on European sites	Recreational pressure created by the Core Strategy is highly unlikely to cause recreational disturbance at Ashdown Forest SAC and SPA; the Core Strategy will not therefore have any adverse impact on the site in this regard.
Air quality	Air pollution generated regionally and locally may contribute to acidification, eutrophication and/or ground level ozone.	Promote modal shift from the car to more sustainable forms of transport Model the transport effects of larger proposed developments to enable air pollution impacts	Additional air pollution created by the proposals contained in the Core Strategy will not have an adverse impact on the integrity of the SAC/SPA.

		to be investigated Design sustainable transport facilities into new development Create sustainable transport routes and links between existing facilities	

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4. The Development Management Plan Stage 1: Screening Assessment

Introduction

4.1 The purpose of the Screening Assessment stage (Stage 1) is to identify whether the plan or project (plan, in this case) is likely to have a significant effect on any Natura 2000 sites, either alone or in-combination with other plans or projects. If a likely significant effect is identified, an Appropriate Assessment (Stage 2) must then be undertaken into the implications of the plan or project in view of the relevant Natura 2000 site's conservation objectives (*the Stages* are set out in Figure 1).

Likely significant effect (LSE)

4.2 Case law[14] provides interpretation of the term 'likely significant effect' (LSE);

a. An effect should be considered 'likely' if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site
b. An effect should be considered 'significant', if it undermines the conservation objectives of the site; and
c. Where a plan or project has an effect on a site but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned.

Is the plan directly connected with or necessary to the management of a European site?

4.3 The DMP is not directly connected with or necessary to the management of a Natura 2000 site. A Screening Assessment is therefore required.

Identification of other plans and projects which may have 'in combination' effects

4.4 It is necessary to consider whether there may also be significant effects in combination with other plans or projects (referred to as 'in-combination effects'). It is clearly neither practical nor necessary to assess the 'in combination' effects of the DMP within the context of all other plans and projects within the South

[14] ECJ Case C-127/02 "Waddenzee", 2004 Landelijke Vereniging tot Behoud van de Waddenzee, Nederlandse Vereniging tot Bescherming van Vogels against Staatssecretaris van Landbouw, Natuurbeheer en Visserij,

East. In practice therefore, in-combination assessment is of greatest relevance when the plan would otherwise be screened out because its individual contribution is inconsequential. For the purposes of this assessment, it is determined therefore that due to the nature of the identified impacts, the key other plans and projects relate to the additional housing, transportation and commercial/industrial allocations proposed for other neighbouring authorities over the lifetime of the Local Plan. Spatial planning policies for local authorities surrounding RBBC are at various stages of production, and Appendix 1 shows the most up to date information on quantum of delivery to be expected during the lifetime of the DMP.

Identification of Natura 2000 sites potentially affected by the DMP

4.5 This stage seeks to identify Natura 2000 sites within or in proximity to Reigate & Banstead Borough which may be affected by the DMP. All Natura 2000 sites within a 15km radius of Reigate & Banstead Borough have been incorporated in the HRA/AA for assessment. The six sites are illustrated in Figure 5.

4.6 An overview of each of the identified Natura 2000 site characteristics is provided in Figure 6. To make an assessment on effects and integrity that a plan may have on a Natura 2000 site it is necessary to have a detailed understanding of the site. This includes; the 'qualifying the features' which are the species or habitats that the site has been designated to protect; the site's vulnerabilities which are specifically related to the threats and pressures on the site; the conservation objectives to maintain/improve the qualifying features; and finally the current conservation status. This is information is detailed in Appendix 2.

4.7 Natura 2000 site information is derived from data held by the Joint Nature Conservation Committee (JNCC) and Natural England on Natura 2000 Data Forms, Ramsar Information Sheets and Site Improvement Plans (SIPs). SIPs have been developed for each Natura 2000 site as part of the Improvement Programme for England's Natura 2000 sites (IPENS). These set out an overview of current and predicted issues at the site.

Figure 5: Natura 2000 sites falling within 15km of Reigate & Banstead

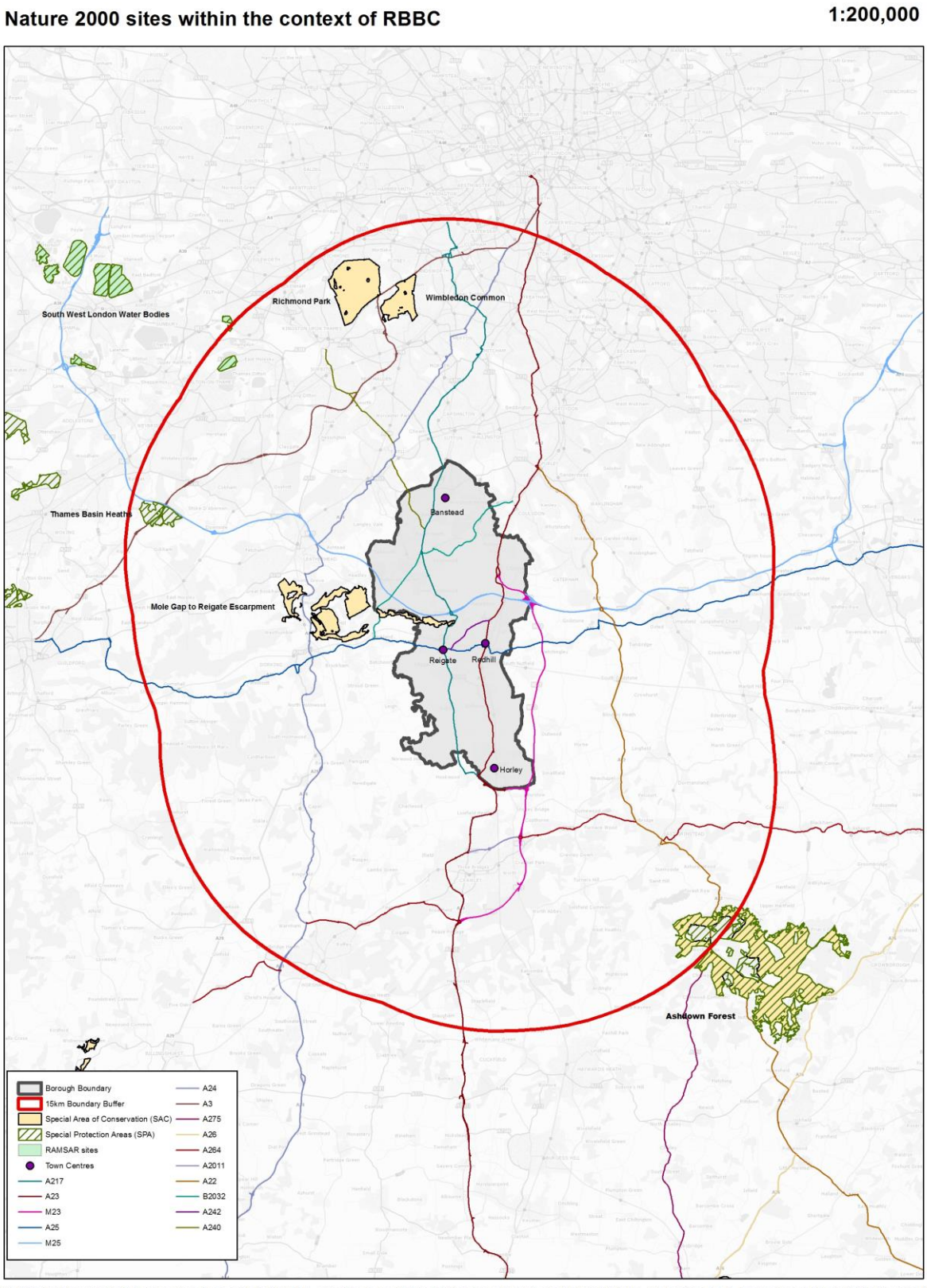


Figure 6: Overview of characterisation of this HRA/AAs Natura 2000 sites

Name And Designation Of Site	Approx. Distance from RBDC	Reason For Designation/ Key Characteristics.
Mole Gap to Reigate Escarpment SAC	0 (within boundary)	The SAC is 888ha in area, of which 60% is broad-leaved deciduous woodland, 25% is dry grassland and 15% is heath/scrub. Most of this site is a mosaic of chalk downland habitats, ranging from open chalk grassland to scrub and broadleaved semi-natural woodland on the scarp slope of the North Downs. The Mole Gap is the only known outstanding locality in the United Kingdom of stable communities of Box woodland *Buxus sempervirens* on rock slopes (the total extent of this community in the United Kingdom is estimated to be less than 100 hectares). This occurs on steep chalk slopes where the river Mole has cut into the North Downs Escarpment. The site is considered to be one of the best areas in the United Kingdom for chalk grassland *Festuco-Brometalia*, important orchid sites and Yew *Taxus baccata* woodland. The site is also considered to support a significant presence of European dry heaths, beech forests *Asperulo-Fagetum;* Great Crested Newt *Triturus cristatus;* Bechstein's bat *Myotis bechsteinii.*
Ashdown Forest SAC & SPA	12.5km	Ashdown Forest is one of the most extensive areas of wet and dry heathland in south-east England. It also has a significant presence of Great Crested Newts. During the breeding season the area regularly supports1% of the GB breeding population of Nightjar *Caprimulgus europaeus;* 1.3% of the GB breeding population of Dartford Warbler *Sylvia undata.*
Thames Basin Heaths SPA	11.8km	Internationally important lowland heathland formed by a mosaic of habitats. During the breeding season the area regularly supports 7.8% of the GB breeding population of Nightjar *Caprimulgus europaeus*; 9.9% of the GB breeding population of Woodlark *Lullula arborea*; and 27.8% of the GB breeding population of Dartford Warbler *Sylvia undata.*
South West London Water bodies SPA & Ramsar Site	13.3km	A series of reservoirs and former gravel pits that support internationally important populations of Shoveler Duck *Anas clypeata* (2.1% of the population of North-western/Central Europe); and Gadwall Duck *Anas strepera* (2.4% of the population of North-western Europe). As a Ramsar Site it also supports nationally important populations of Black-necked grebe *Podiceps nigricollis nigricollis* and Smew *Mergellus albellus* during the winter and nationally important populations of Great

Name And Designation Of Site	Approx. Distance from RBDC	Reason For Designation/ Key Characteristics.
		crested grebe *Podiceps cristatus cristatus*, Great cormorant *Phalacrocorax carbo carbo* and Tufted duck *Aythya fuligula* during the spring/ autumn.
Richmond Park SAC	9.4km	Richmond Park has a large number of ancient trees with decaying timber. It is at the heart of the south London centre of distribution for the European stag beetle *Lucanus cervus.*
Wimbledon Common SAC	9.4km	The site is one of only four known outstanding localities in the United Kingdom for European stag beetle *Lucanus cervus.* The area is considered to support a significant presence for European dry heaths and Northern Atlantic wet heaths with cross-leaved heath *Erica tetralix.*

Natura 2000 sites and Sites of Special Scientific Interest (SSSI)

4.8 The HRA/AA is concerned with any potential effects on European designations and therefore Natura 2000 sites only. However Sites of Special Scientific Interest (SSSI) are the site based conservation tool in the UK and are designated by Natural England. SSSIs are therefore regularly found at the same location as European designated SAC's and SPAs. However an SSSI will be designated based on the characteristics of its fauna, flora, geology and/or geomorphology. The reasons for its designation can be entirely different to those for which the same area is designated as a SAC or SPA.

4.9 Natural England periodically assesses the conservation conditions of each SSSI unit, assigning it a status of one of the following:

- Favourable
- Unfavourable – recovering
- Unfavourable – no change
- Unfavourable – declining

4.10 The SSSI may be in an unfavourable state due to the condition of features unrelated to its European designation. However, it is considered that the conservation status of SSSI units that overlap with European designated sites offer a useful indicator of habitat health at that location. For example, an SSSI unit in an unfavourable condition because of excess nitrogen deposition, which

is resulting in changes in local flora species composition, may indicate that habitats at this location are particularly sensitive to increases in atmospheric nitrogen deposition.

4.11 The quantity and condition of SSSI units overlapping with Natura 2000 sites within 15km of the Reigate & Banstead border will be referred to during the assessment of potential effects where relevant.

Impact Pathways

4.12 As the DMP focuses on the development and use of land, therefore the content and the proposed changes to the Borough within the DMP have the potential to affect the integrity of Natura 2000 sites. In carrying out a HRA/AA it is important to determine the various ways in which these changes proposed in land use plans can impact on Natura 2000 sites.

4.13 The first step in the screening process is to identify 'impact pathways.' These are routes by which activities associated with development can lead to 'Likely Significant Effects' upon a Natura 2000 site (see 4.2). In some cases dependent on the nature of the impact, the pathway can be many kilometres distant.

4.14 Impact pathways are identified through assessing the threats and pressures that the qualifying and supporting features within each Natura 2000 site are vulnerable to. Appendix 3 is a list of all the different threats and pressures presented in the Site Improvement Plans (SIPs) and the species that are vulnerable to them in each Natura 2000 sites.

4.15 Those threats and pressures that are clearly beyond the scope of influence of the DMP or those that are considered under a different but similar listing are not considered any further in this HRA/AA they listed below:

a. Feature location/ extent/ condition unknown

b. Disease

c. Changes in species distributions

d. Natural changes to site conditions

e. Undergrazing

f. Forestry and woodland management

g. Habitat Fragmentation

h. Inappropriate weed control

i. Wildfire/arson

j. Invasive Species

k. Change in Land Management

l. Fisheries: Fish stocking

m. Military

n. Air Pollution: Impact of atmospheric nitrogen deposition

o. Hydrological changes.

4.16 There are four 'threats/pressures' that have been identified as being necessary to screen to determine if the development proposed in the DMP has the potential to result in 'Likely Significant Effects' on one or more of the Natura 2000. Figure 7 (which is summary of Appendix 3) identifies the Natura 2000 sites that have one or more of these 'threats/pressures' affecting a 'qualifying species' that could be exacerbated further by proposed development.

Figure 7: Threats/Pressures per Natura 2000 necessary to screen for 'Likely Significant

Threat/Pressure	Mole Gap and Reigate SAC	Ashdown Forest SAC/SPA	Richmond Park SAC	South West London Waterbodies SPA/Ramsar	Thames Basin SPA	Wimbledon Common SAC
Air Pollution: Impact of atmospheric nitrogen deposition (from increased emission's)	Yes	Yes	No	No	Yes	Yes
Public Access/Disturbance	Yes	Yes	No	Yes	Yes	Yes
Hydrology/Water quality impacts	No	Yes	No	Yes	Yes	No
Mobile species requiring 'Functional Linkage' e.g. Bechstein's bat	Yes	No	No	No	No	No

Air Pollution: impact of atmospheric nitrogen deposition

4.17 Air pollution is most likely to directly affect plant, soil or water habitats. However, it may affect fauna indirectly as a result of deterioration in habitat. Deposition of pollutants to the ground can result in acidification (a consequence of which is a change in the vegetation that soils can support), eutrophication (which can cause competitive paly species to dominate over slower growing and rarer species) and ozone exposure (which can directly damage plants, reducing growth rates and increasing vulnerability to water stress).

4.18 Air quality impacts from vehicle exhausts, include oxides in nitrogen, nitrogen deposition, ammonia emissions and acid deposition. The importance of considering 'In-combination effects' on air quality (i.e. accounting for other authorities' proposed growth as set out in emerging/adopted Local Plans), has been highlighted through the recent successful legal challenge by Wealden District Council in relation to the Lewes Joint Core Strategy (the Wealden case/Judgment.[15]

The 200 metres principle

4.19 To support this HRA/AA an initial Air Quality Impact Assessment was undertaken comparing the predicted change in vehicle flows on roads within 200 metres of the Natura 2000 sites that are a) within distance of predicted growth due to the Reigate & Banstead DMP and b) are vulnerable to changes in atmospheric nitrogen deposition.

4.20 Vehicle exhaust emissions generally only have a local effect within approximately 200 metres of the centreline of the road. The rate of decline is steeply curved rather than linear. In other words, concentrations will decline rapidly as one begins to move away from the roadside, slackening to a more gradual decline over the rest of the distance.

Increased traffic growth calculations

4.21 Predicted growth data based on site allocations from both Reigate & Banstead DMP and from surrounding authorities (see Appendix 1) were used to calculate the 'in-combination' annual average daily traffic (AADT). This is the measure used to predict future levels of traffic. It is used to ascertain whether collectively; i.e. in combination, the predicted traffic increases exceeds the threshold of 1000 AADT or 1% of critical level/load. If it does, then a significant effect cannot be excluded and an appropriate assessment is therefore required.

[15] Wealden District Council v Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority [2017] EWHC351 (Admin)

4.22 Initial assessments of ADDT projections were conducted to ascertain potential 'impact pathways' from the four Natura 2000 sites (identified in Figure 7) as vulnerable to increased emissions. The road links listed below (Figure 8) were selected as they are all representative points on the busiest roads within meaningful distance to proposed development and the Natura 2000 sites within 200 metres of the roadside. They are also the roads likely to experience the greatest increase in flows over the period to 2033. As such, these are the roads where an air quality effect due to additional traffic growth is most likely to be observed, and they run through three Natura 2000 sites.

Figure 8: Road Links and the corresponding Natura 2000 sites assessed for increased traffic projections

Link Name Description	Natura 2000 Sites
A217 Reigate Hill	Mole Gap to Reigate Escarpment SAC
M25 Junction 8 to 9	Mole Gap to Reigate Escarpment SAC
B2032 Pebble Hill	Mole Gap to Reigate Escarpment SAC
M25 east of M25 J10	Thames Heath Basin SPA
M25 west of M25 J10	Thames Heath Basin SPA
A3 south of M25 J10	Thames Heath Basin SPA
A3	Wimbledon Common SAC
A219	Wimbledon Common SAC

Traffic data and Scenarios

4.23 Traffic data were generated for each of these links for three scenarios;

- Base Case
- Do Nothing (DN)
- Do Something (DS)

4.24 The Base Case uses measured flows, percentage Heavy Duty Vehicles (HDVs) and average vehicle speeds on the relevant links, as provided either by Surrey County Council, Highways England (regarding the M25) or, for more minor roads, specifically collected by AECOM for this HRA/AA. Since the most recent traffic count data are for 2017, that year has been used as the base year for this modelling. Since the emerging plans are backdated several years, this means that housing and employment development that has been delivered and occupied prior to 2017 is allowed for in the measured baseline flows. However, this is also true for all other local authorities, so there is no disparity in treatment of local authorities in the modelling.

4.25 Development that has been consented but not actually completed/occupied does not appear in the baseline flows and is instead added to the modelled future (2033) Do Something scenario as this development would not have been contributing traffic to the road network at the time traffic counts were undertaken.

4.26 The Do Nothing scenario describes the future flows on the same roads by 2033, without consideration of the role of all the Plans in-combination. An assessment year of 2033 has been selected for the future scenario as this is the year at which Local Plan traffic will be at its greatest. The scenario is calculated by extrapolating the observed traffic data. The Do Nothing scenario adds all traffic growth from 2017 to 2033 that will result in additional journeys on the modelled road links.

4.27 For the purposes of 'in combination' assessment (i.e. incorporating growth into the model due to multiple Local Plans and Core Strategies for surrounding authorities) it was decided that modelling the adopted Local Plans directly would not reflect actual housing growth in those authorities between 2017 and 2033 because:

1. Since most commence in 2006 they include a large number of allocations that are historic (i.e. already delivered and occupied) and these are already part of the measured base flows.

2. Adopted plans for these authorities may not accurately reflect growth over the period 2017 to 2033 because most adopted plans for the boroughs/districts immediately around the SAC finish prior to 2033. This means that there will be several years of growth which is not covered by most adopted plans.

4.28 Expected development in these authorities over the period 2017 to 2033 was therefore included in the model by using the National Trip End Model Presentation Program (TEMPRO). TEMPRO produces a growth factor that is applied to the measured flows. It is based on data for each local authority district in the UK (distributed by statistical Middle Layer Super Output Area[16]) regarding future changes in population, households, workforce and employment (in addition to data such as car ownership) but is not limited to a given period of time. Traffic growth factors are utilised for the statistical Middle Layer Super Output Areas (MSOAs) within which the modelled links are located. TEMPRO has the advantages of being forecastable to 2033 and

[16] Middle Layer Super Output Areas are a geographical hierarchy designed to improve the reporting of small area statistics in England and Wales. They are a series of areas each of which has a minimum population of 5,000 residents. They have a mean population of 7,200 residents.

beyond, using growth assumptions that are regularly updated and distributed to the level of Middle-Layer Super Output Area and of being an industry standard database tool across England. This means that modelling exercises that use TEMPRO will have a high degree of consistency.

4.29 The Do Something scenario is combination traffic in the relevant Plans, with the existing Do Nothing modelling. Using GIS software the distribution of each of these groups was calculated using Census 2011 journey to work data, and the trips associated with each distribution group then manually assigned across the network.

4.30 The 'in combination' growth scenario is therefore the Do Something flows, as these include existing traffic, all future journeys arising from within Tandridge District Council, Mole Valley District Council and Reigate & Banstead Borough Council due to the Local Plans (from AECOM's model), and future traffic arising from all other authorities (from TEMPRO, adjusted for expected higher growth rates in some authorities; the plans/growth rates used for these authorities). The difference between the Do Something scenario and the Do Nothing scenario illustrates the role of the Tandridge District Council, Mole Valley District Council and Reigate & Banstead Borough Council in changing future flows compared to what would be expected without the Local Plan proposals.

Public Access/Disturbance

4.31 Public access and disturbance through recreational access - e.g. dog walking - can have an adverse impact on the integrity of a Natura 2000 site as a result of erosion, trampling or general disturbance.

4.32 The integrity of all of the Natura 2000 within the scope of this HRA/AA (with the exception of Richmond Park SAC) have been identified in the SIPs as being vulnerable to public access/and disturbance (identified in Figure 7). Richmond Park SAC is located in a densely populated area and is also susceptible to large visitor numbers.

4.33 The available visitor studies and site management plans for the relevant Natura 2000 sites that are vulnerable to public access/disturbance identify the distance of 7km as the cut-off point for potential concern. All the Natura 2000 sites outside of the Reigate & Banstead Borough are over 10km away from the boundary. Therefore only the Mole Gap and Reigate Escarpment SAC is screened as having an 'impact pathway' for potential likely significant effect public access/disturbance and needs to be assessed further (see 4.41 to 4.45 for the assessment detail).

4.34 Disturbance through changes in the management such as maintenance of a sympathetic grazing regime is necessary for certain habitats e.g. grass chalklands in the SAC. Grazing suppresses the growth of more competitive plant species and encourages a more diverse selection of plants compared to mowing. However development proposed in the DMP does not have a pathway to have an impact on grazing management practices that are in place in Mole Gap to Reigate Escarpment SAC and this threat/pressure has therefore not been included in the screening.

Hydrology/water quality

4.35 All Natura 2000 sites have the potential to be affected adversely by hydrology, water quality, or water flow as they are a critical part of an ecosystem's functionality. The 'impact pathways' for affect is influenced by the specific ecology of the qualifying features and the associated threats/pressures of the Natura 2000 sites and the corresponding proposed development in terms of scale, distance and physical connection through watercourses and bodies. Figure 9 shows these sites within the context of catchments and waterbodies, particularly those identified as vulnerable in Figure 7. The Mole catchment is within the Thames River Basin Management Plan. This addresses the key pressures in the catchment[17]. Mole Gap to Reigate Escarpment SAC is not identified as being specifically vulnerable to impacts from changes to hydrology/water quality.

4.36 Three Natura 2000 sites within the scope of this HRA/AA have shown as being particularly vulnerable to hydrology/water quality in Figure 7; Ashdown Forest SAC, South West London Waterbodies SPA/Ramsar, and Thames Basin Heath SPA.

4.37 Ashdown Forest SAC/SPA is vulnerable to hydrological changes in relation to the decline of the botanical diversity of the wet heath (and valley mire systems and bogs encompassed within it). This decline has occurred over the last few decades. Research into understanding the reasons for the decline and the identification of better management of the wet areas is under way by Natural England and other conservation bodies. Currently there is no citation of a link of indirect development on the hydrological changes. The SAC is within the Ouse (and connected to Medway) watershed and is approximately 12.5km from Reigate & Banstead Borough Council. It can therefore be concluded that there are no impact pathways and therefore is beyond the scope of impact. It has therefore not been included in the screening.

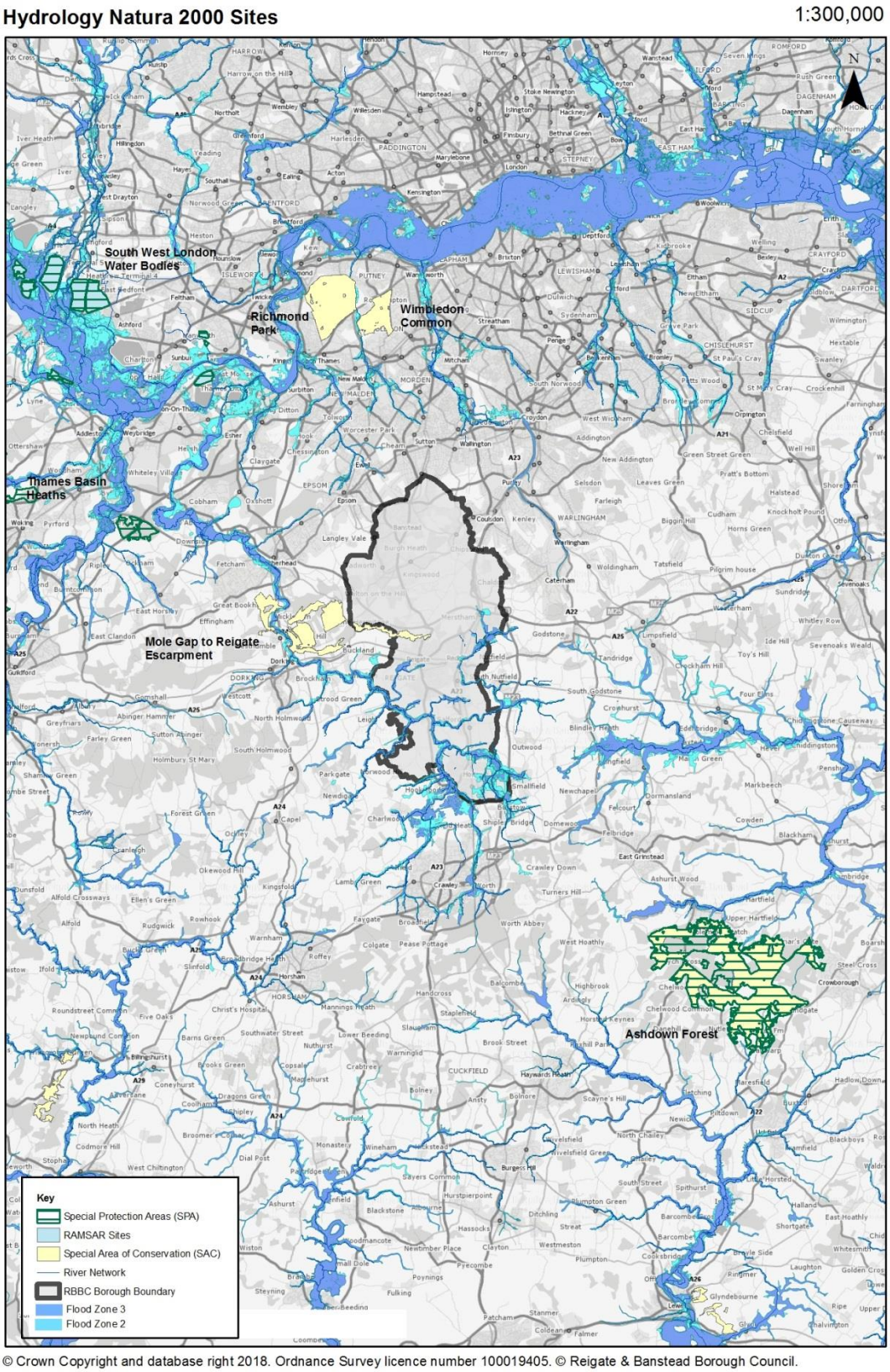
[17] 'Water for life and livelihoods River Basin Management Plan Thames River Basin District' Published by Environment Agency (2009)

4.38 South West London Waterbodies SPA/Ramsar is vulnerable to changes in water quality and changes water plant ecology (in particular the increase in the invasive water weed *Crassula helmsii).* These changes are specifically due to recreational pressures, specifically water sports and fishing (stocking of recreational fishing stocks). However this SPA/Ramsar is approximately 13.3km from Reigate & Banstead Borough Council. It is therefore concluded that as the threat is from recreational pressure it is too distant for there to be an impact pathway. It has therefore not been included in the screening.

4.39 Thames Basin Heaths SPA is vulnerable to hydrological changes from the impacts due to drainage, and this is becoming more urgent due to changing weather patterns. However this SAC is approximately 11.8km from Reigate & Banstead Borough Council. Additionally Figure 9 shows that there is not a direct impact pathway for the watershed to be affected by development proposed in the DMP. It has therefore not been included in the screening.

4.40 It can be concluded that hydrology/water quality can be 'screened out' from having any potential likely significant effect due to no direct impact pathways, and is therefore not considered further in this HRA/AA.

Figure 9 the catchment and waterbodies within scope of the HRA/AA



Disturbance to roosting populations of Bechstein's bats

4.41 The Mole Gap to Reigate Escarpment SAC supports a population of Bechstein's bat (*Myotis bechsteinii*). The species uses the site throughout the year as a hibernacula, autumn 'swarming' site, and as feeding habitat. Natural England has worked with local bat surveyors to locate maternity roosts, and to gain a better understanding of the movements and requirements of bats on this site. Bechstein's bat is one of the UK's rarest mammals, recorded from only a small number of sites in southern England and Wales. It is closely associated with mature deciduous woodland and appears to select old woodpecker holes or rot holes in trees for breeding. It also occurs in coniferous woodland in some areas. In Annex II it is stipulated as a qualifying feature, but not a primary reason for site selection. The Site Improvement Plan specifies improvements to Bechstein's bat hibernacula, and habitat connectivity as a conservation objective.

4.42 Bechstein's bats roosting within the Mole Gap to Reigate Escarpment SAC rely on land outside of the site boundaries. This is in part because they are a highly mobile species. Land which is required to sustain species associated with a Natura 2000 site is referred to as 'functional linkage'[18]. Where impacts to 'functional linkage' could result in significant effects to the bat populations associated with the SAC, full consideration needs to be undertaken under the Habitats Regulations (in the same way as habitat in the SAC). All Bat species in the UK are protected through European protected species legislation. This legislation protects the bats and their breeding and resting places; it is however the effect of the designation of the SAC that protects, through the Habitats Regulations Assessment process, the habitat of the bats outside the SAC.

4.43 There is no specific guidance on the requirements of 'functional linkage' land as it is largely based on the ecology of the species that the Natura 2000 site is designated to protect. In response to this the Bat Conservation Trust has established Core Sustenance Zones (CSZ)[19] for bats. CSZs refer to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost.

4.44 As the CSZ size is species specific, it is determined via a meta-analysis of data describing foraging radii data. For the Bechstein's bat this rounds to 1km. However BCT advises the application of CSZ of at least 3km to accommodate

[18] Natural England Commissioned Report NECR207 (2016) Functional Linkage: areas that are functionally linked to European sites have been considered when they may be affected by plans and projects - a review of authoritative decisions

[19] Bat Conservation Trust (BCT) 2015 Bat conservation Trust Core Sustenance Zones http://www.bats.org.uk/data/files/Core_Sustenance_Zones_Explained_-_04.02.16.pdf

the species' specialised habitat requirements and rarity. To account for distance approximation, a CSZ of 3.5km has been set around Mole Gap to Reigate Escarpment SAC.

4.45 Therefore the 3.5km CSZ includes protecting 'functional linkages' from any development that has potential to impact greenfield sites or existing mature vegetation lines (trees and hedgerows) and/ or river bank corridors that have the potential to impact upon the commuting and foraging routes of bats for which these sites are designated. This could include direct loss of habitat and light and sound/ vibration pollution.

DMP Objectives/policies - Screening Assessment Findings

4.46 The next step in the screening process is to screen the policies within the DMP against the threats and pressures identified in Figure 7 where there are impact pathways which have the potential likely significant effects.

4.47 The objectives on their own do not directly result in activities or operations. It is the way in which these objectives are achieved through policies that may generate activities or operations which could have LSE on Natura 2000 sites. For this reason the objectives have been assessed together with the policies in which they shape this process (this forms Appendix 4).

Criteria based policies that guide the detailed design and siting of new development

4.48 The majority of policy approaches proposed are criteria-based policies to guide the detailed design of new development. These policy approaches do not directly have an impact on the scale or location of new development. They will not have a likely significant effect on Natura 2000 sites and have therefore been screened out.

Figure 10 Policy approaches with no HRA/AA implications

DMP Policy Approach	HRA/AA Implications/Impact Pathways
EMP5: Local skills and training opportunities	No impact pathways/No HRA/AA Implications
RET2: Town centre frontages	No impact pathways/No HRA/AA Implications
DES1: Design of new development	No impact pathways/No HRA/AA Implications
DES2: Residential garden land development	No impact pathways/No HRA/AA Implications
DES3: Residential Areas of Special Character	No impact pathways/No HRA/AA Implications
DES4: Housing mix	No impact pathways/No HRA/AA

DMP Policy Approach	HRA/AA Implications/Impact Pathways
	Implications
DES5: delivering high quality homes	No impact pathways/No HRA/AA Implications
DES6: Affordable Housing	No impact pathways/No HRA/AA Implications
DES7: Specialist Accommodation	No impact pathways/No HRA/AA Implications
DES8: Construction management	No impact pathways/No HRA/AA Implications
DES9: Pollution and contaminated land	No impact pathways/No HRA/AA Implications
DES10: Advertisement & shop front design	No impact pathways/No HRA/AA Implications
TAP1: Access, parking and services	No impact pathways/ No HRA/AA Implications
TAP2: Airport car parking	No impact pathways/No HRA/AA Implications
CCF2: Flood Risk	No impact pathways/No HRA/AA Implications
NHE1: Landscape Protection	No impact pathways/No HRA/AA Implications
NHE4: Green / Blue Infrastructure	No impact pathways/No HRA/AA Implications
NHE5: Development within the Green Belt	No impact pathways/No HRA/AA Implications
NHE6: Reuse and adaptation of buildings in the Green Belt and Rural Surrounds of Horley	No impact pathways/No HRA/AA Implications
NHE7: Rural Surrounds of Horley	No impact pathways/No HRA/AA Implications
NHE8: Horse keeping and equestrian development	No impact pathways/No HRA/AA Implications
NHE9: Heritage Assets	No impact pathways/No HRA/AA Implications
CEM1 Cemetery and crematorium provision:	No impact pathways/No HRA/AA Implications
INF2: Community facilities	No impact pathways/No HRA/AA Implications
INF3: Electronic Communication Networks	No impact pathways/No HRA/AA Implications
MLS1: Phasing of urban extension sites:	No impact pathways/No HRA/AA Implications
MLS2: Safeguarding land for development beyond the plan period	No impact pathways/No HRA/AA Implications – at this stage

Criteria based policies that have a positive effect in relation to European sites and species

4.49 There are policy approaches that have a positive impact in relation to, or seek to safeguard, Natura 2000 sites and species. These proposed policy approaches have therefore been screened out for Appropriate Assessment. These are highlighted in Figure 11.

Figure 11 Policy approaches with positive HRA/AA implications

DMP Policy Approach	HRA/AA Implications/Impact Pathways
OSR1: Urban open space	No impact pathways/Positive HRA/AA Implications
OSR2: Open space in new developments	No impact pathways/Positive HRA/AA Implications
CCF1: Climate Change	No impact pathways/Positive HRA/AA Implications
NHE2: Protecting and enhancing biodiversity and areas of geographical importance	No impact pathways/Positive HRA/AA Implications
NHE3: Protecting trees, woodland areas and natural habitats	No impact pathways/Positive HRA/AA Implications

Emerging policy approaches that relate to the scale or location of development

4.50 There are a total of fifteen DMP policies that screening identified as impact pathways that could potentially lead to likely significant effects (as shown in Figure 12). These relate to either air quality from increased traffic and/or loss of Bechstein's bat 'functional linkage.' These policies are considered further in the Natura 2000 site focused screening (see 4.55).

Figure 12 policies with the potential for likely significant effect.

DMP Policy Approach	HRA/AA Implications/Impact Pathways (green = screened out, amber = screened in for Appropriate Assessment)
EMP1 Principal Employment Areas	Air Quality from increased traffic Bechstein's bat Functional Linkage
EMP2: Local Employment Areas:	Air Quality from increased traffic Bechstein's bat Functional Linkage Air Quality from increased traffic
EMP3: Employment Development Outside Employment Areas	Air Quality from increased traffic

EMP4: Safeguarding employment land and premises	Air Quality from increased traffic
RET1: Development within identified retail frontages and local centres	Air Quality from increased traffic
RET3: Local Centres	Air Quality from increased traffic
RET4: Development within identified retail frontages and local centres	Air Quality from increased traffic
RET5: Development of town centre uses outside town and local centres	Air Quality from increased traffic
RET6:Retail Warehousing	Air Quality from increased traffic Bechstein's bat Functional Linkage
OSR3: Outdoor sport and recreation	Bechstein's bat Functional Linkage
Section 3A: Area 1 - the North Downs	Air Quality from increased traffic
Section 3B: Area 2a - Wealden Greensand Ridge - Redhill and Merstham	Air Quality from increased traffic Bechstein's bat Functional Linkage
Section 3C: Area 2b - Wealden Greensand Ridge - Reigate	Air Quality from increased traffic Bechstein's bat Functional Linkage
Section 3D: Area 3 - The Low Weald	Air Quality from increased traffic
INF1: Infrastructure	Air Quality from increased traffic .

Screening Assessment Findings – DMP Allocation sites

4.51 A screening assessment for each allocation site proposed in the DMP was carried out and forms Appendix 5. The allocations sites in the DMP are located in four areas; Area 1, Area 2a, Area 2b and Area 3 shows the site allocations in relation to development site options in the Mole Gap to Reigate Escarpment SAC and the Natura 2000 sites within 15km of the Council boundary. The allocation includes mixed use, commercial, employment, residential and gypsy traveller pitches.

4.52 The screening assessment identified that each site when considered in-combination with other proposed development had potential to have a likely significant effect in relation to air pollution due to increase in traffic. All site allocations are therefore considered in screening of each Natura 2000 site (see Chapter 5).

4.53 The other were impact pathways identified in relation to the site allocations were public access/disturbance and Bechstein's bat 'functional linkage.' Both relate to Mole Gap to Reigate Escarpment (see 4.56 – 4.62).

Natura 2000 site - Screening Assessment Findings

4.54 It is good practice to combines both a Plan and a Natura 2000 Site focus. The policy screening removes from consideration those elements of the plan unlikely to have effects on European sites. The remaining plan elements form Appendix 5 and are summarised in Figure 13. The potential impacts can then be considered in more detail for their impacts on Natura 2000 Sites. The site focus screening considers the impacts and potential effects identified through the policy screening, in the light of the environmental conditions necessary to maintain site integrity for the European sites scoped into the assessment. Each potential impact is considered alone (A) and in-combination (IC).

Figure 13 screening of DMP with a Natura 2000 site focus this is summary of Appendix 5

	Potential Likely Significant Effects (LSE)							
Natura 2000 Site	Air Pollution: Impact of atmospheric nitrogen disposition		Public Access/Disturbance		Hydrology/water quality		Habitat Loss & Fragmentation (Bechstein's bat)	
	A	IC	A	IC	A	IC	A	IC
Mole Gap to Reigate Escarpment SAC	No	Yes	No	No	No	No	Yes	No
Ashdown Forest SAC/SPA	No	No	No	No	No	No	NA	NA
Wimbledon Common SAC	No	Yes	No	No	No	No	NA	NA
Thames Basin Heaths SPA	No	Yes	No	No	No	No	NA	NA
Richmond Park SAC	No	No	No	No	No	No	NA	NA
South West Waterbodies SPA/Ramsar	No	No	No	No	No	No	NA	NA

Mole Gap to Reigate Escarpment SAC

Mole Gap the Reigate Escarpment SAC – Air Quality

4.55 The initial assessment of AADT projections on this site showed that the predicted traffic increase exceeds the threshold of 1,000 AADT or 1% of critical level/load (see Figure 14). As such all spatial policies and allocation policies have the potential to have Likely Significant Effect on Mole Gap to Reigate Escarpment and therefore it cannot be screened out and Appropriate Assessment is required (see Chapter 5).

Figure 14 AADT projections in key links through Mole Gap to Reigate Escarpment

Link Name Description	Reigate & Banstead Local Plan (AADT)
A217 Reigate Hill	2,723 (48%)
M25 Junction 8 to 9	4,707 (38%)
B2032 Pebble Hill	214 (13%)

Mole Gap to Reigate Escarpment SAC – Public Access/Disturbance

4.56 Public access pressure at the Mole Gap to Reigate Escarpment is focused mainly at honeypot sites, visited primarily by tourists (although some local and regular visits are made). In Reigate & Banstead, the main honeypot locations are Reigate Hill Viewpoint, Reigate Hill Fort, the Ingliss Memorial and the North Downs Way leading westwards towards Mole Valley. The effects of recreational pressure relate mainly to the trampling of grass, and litter.

4.57 Although there is a potential for an impact pathways due to recreational disturbance in terms of distance to the Mole Gap to Reigate Escarpment, the screening assessment in Appendix 5 shows that the number of residential units proposed within 7km of the SAC is relatively low.

4.58 As a very large percentage of visitors to the SAC are from outside the borough, visiting honeypot locations, and considering the location of development proposed through the DMP, the impact of this new development through recreational pressure is considered to be minimal. Natural England has advised that based on the location and scale of the proposed site allocations that recreational impact on the Mole Gap and Reigate Escarpment SAC can be screened out and does not require further assessment.

4.59 It is worth noting that since the Core Strategy was adopted the Council has prepared and agreed a Green Infrastructure Strategy, which includes a range of measures to manage pressures on the SAC and to provide alternative recreation spaces. Most recently, the Council declared the Banstead Woods

and Chipstead Downs as a local nature reserve and has invested in improving visitor opportunities at this site and publicising it as a place to visit. The Council has also invested in improvements to Memorial Park in Redhill, and to improving the range of visitor activities at Priory Park in Reigate.

Mole Gap the Reigate Escarpment SAC – Bechstein's bats

4.60 The screening of the site allocation identified fourteen proposed development sites that were within the 3.5km Core Sustenance Zone (CSZ) for Mole Gap to Reigate Escarpment SAC. These were within Area 2a Redhill-Merstham and Area 2b Reigate. Due to their location alone, these sites have the potential to impact on the 'functional linkage' of Bechstein's bats within the SAC (see Figure 15). These development sites in combination with the general spatial policy identified in Figure 12 are 'screened in' for Appropriate Assessment (see Chapter 5).

Figure 15 Allocation sites within the CSZ

Policy	Site location/	Distance from Mole Gap to Reigate Escarpment (Approx.)	Impact Pathway Bechstein's Bat
Area 2a Redhill and Merstham			
RTC2	16-46 Cromwell Road, Redhill	2.4km	Yes
RTC6	Gloucester Road Car Park, Redhill	2.4km	Yes
RTC4	Colebrook, Noke Drive, Redhill	2.4km	Yes
RTC5	Former Longmead Centre, Redhill	2.4km	Yes
RED4	Church of Epiphany, Mansfield Drive, Merstham	3.3km	Yes
RED8	Reading Arch Road/Brighton Road North	2.4km	Yes
ERM1	Land at Hillsbrow, Redhill	3.1km	Yes
ERM2/ ERM3	Land west of Copyhold Works and former Copyhold Works, Redhill	3.2km	Yes
Area 2b Reigate			

REI1	Library and Pool House, Bancroft Road	1.6km	Yes
REI2	Land adjacent to the Town Hall, Castlefield Road	1.3km	Yes
REI3	Albert Road North Industrial Estate	800 metres	Yes
SSW2	Land at Sandcross Lane, South Park	3km	Yes

Ashdown Forest SPA/SAC

4.61 Taking into account transport modelling undertaken in support of the DMP, it is concluded that any increase in road traffic on roads in the vicinity of the SPA/SAC generated by the Horley Business Park will be marginal over and above baseline growth. Additionally the other proposed developments are a far enough distance from Ashdown Forest SPA/SAC to conclude that there are no impact pathways in terms of air quality and it can therefore be screened out.

4.62 No other specific impacts have been identified as arising from other development allocations within the DMP, taking into account the distance between the SPA/SAC and Reigate & Banstead Borough.

Richmond Park SAC

4.63 APIS concludes that whilst the woodland habitats which stag beetle inhabit are vulnerable to nitrogen deposition, stag beetles themselves are not vulnerable to nitrogen deposition. The main reason cited is that 'nitrogen deposition is not believed to have a direct, major effect on tree growth in the UK' and thus the cycle of tree growth and death should continue, as should a continued supply of dead wood. Most of the effects of nitrogen deposition on woodlands are on features other than tree growth, such as ground flora diversity/structure, fungi and lichen populations.

4.64 As such it can be concluded that growth in Reigate & Banstead Borough does not have any impact pathways that could interact with the SAC in a manner that would prevent it achieving its conservation objectives for the qualifying feature the stag beetle.

South West Waterbodies SPA/RAMSAR

4.65 The qualifying features for this site are not susceptible to changing air quality from traffic and therefore any effect can be screened out. Although water chemistry is integral to the favourable conservation status of South West

Waterbodies SPA/RAMSAR it is judged that due to the distance from proposed growth it can be screened out as not having an effect.

Thames Basin Heaths SPA

4.66 All the qualifying features - the three bird species and heathlands present - in the Thames Basin Heaths SPA are vulnerable to changes in air quality due to emissions from vehicles. An initial assessment of ADDT showed that the predicted traffic increase exceeds the threshold of 1,000 AADT or 1% of critical level/load (as shown in Figure 16) by 2033.

4.67 It can be seen that the forecast change in flows on the A3 is small but not negligible. The change in flows expected on the M25 is unsurprisingly greater and is highest on the section of M25 east of Junction 10. It should be noted that proportionally-speaking these increases in traffic movement are not large. For example, existing two-way traffic flows on the M25 in this location are in the region of 170,000 AADT. These increases suggest that there is a potential of significant effect and as such will be included in an Appropriate Assessment (Chapter 5).

Figure 16 AADT projections in key links through Thames Basin Heath SPA

Link Name/Description	Change in two-Way AADT due to growth in Reigate & Banstead Borough
M25 east of M25 J10	3,166
M25 west of M25 J10	2,383
A3 south of M25 J10	878

Wimbledon Common SAC

4.68 Heathland is one of the qualifying features of the Wimbledon Common SAC, and is vulnerable to changes in air quality due to emissions from traffic. Specifically changes in NOx and nitrogen deposition. Figure 17 below presents the change in AADT expected on the A3 within 200m of Wimbledon Common SAC and the A219 within 200m of Wimbledon Common SAC by 2033.

4.69 At 30m from the roadside the 'in combination' NOx emissions from traffic growth 'in combination' are forecast to be 3.11 µgm-3 (10% of the critical level of 30 µgm-3). Therefore likely significant effects from all traffic growth cannot be dismissed out of hand based purely on whether they fall below 1% of the critical level'. As such an appropriate assessment is therefore required (see Chapter 5).

Figure 17 AADT projections in key links through Wimbledon Common SAC

Link Name/Description	Change in two-Way AADT due to growth in Reigate & Banstead Borough
A3	196
A219	14

Conclusions of Screening Assessment

4.70 The screening stage (Stage 1) is the first step in any Habitats Regulations Assessment of this is essentially the Likely Significant Effect (LSE) test. This is a risk assessment to decide whether the full subsequent stage known as Appropriate Assessment (Stage 2) is required. The objective is to 'screen out' those plans and projects that can, without any detailed appraisal, be said to be unlikely to result in significant adverse effects upon Natura 2000 sites, usually because there is no mechanism or 'impact pathway' for an adverse interaction with these sites.

4.71 The screening assessment undertaken for the DMP objectives, proposed policy approaches and proposed development sites. therefore concludes that the proposals within the DMP submission document will not have any likely significant impacts, either alone or in combination with other plans, on the integrity of any European site or species in relation to public/disturbance or hydrology/water quality.

4.72 The screening assessment did identify impact pathways and therefore potential 'Likely Significant Effects' with regard to air quality from traffic emissions to the Natura 2000 sites listed below. Accordingly an Appropriate Assessment has been conducted.

a. Mole Gap to Reigate Escarpment SAC

b. Wimbledon Common SAC

c. Thames Basin Heaths SPA

4.73 The screening assessment also identified potential Likely Significant Effects in relation to Bechstein's bats' 'functional linkage' to Mole Gap to Reigate Escarpment SAC.

Further Assessment Required?

4.74 On the basis of the screening assessment conclusions, progression to an Appropriate Assessment (Stage 2) is only required in relation to traffic generated air quality in combination effects on Mole Gap and Reigate

Escarpment SAC; Wimbledon Common SAC and Thames Basin Heaths SPA; and ‘functional linkage’ to accommodate Bechstein’s Bat in the Mole Gap to Reigate Escarpment SAC foraging requirements.

5. The Development Management Plan Stage 2: Appropriate Assessment

5.1 Appropriate Assessment (Stage 2) is essentially an 'integrity' test. It is the Council's responsibility as the 'competent authority' it is necessary to guarantee 'beyond all reasonable doubt' that the DMP will not 'adversely affect the integrity of the Natura 2000 site.

5.2 The Appropriate Assessment considers the favourable conservation status (FCS) of the qualifying features in the Natura 2000 sites and current site conditions. The assessment of SSSI units (refer to 4.8) within the Natura 2000 sites are regularly updated by Natural England it is therefore useful to use these assessments as basis for current conservation status. Details of each relevant SSSIs within the Natura 2000 site forms Appendix 7.

5.3 This chapter is divided into two main sections the Appropriate Assessment in regard to; Air Quality Assessment and; Bechstein's bats' functional linkage to Mole Gap and Reigate Escarpment SAC.

Air Quality Assessment

Measures of air quality impacts

5.4 Five measures of air quality pollutants are considered: oxides of nitrogen (NOx); nitrogen deposition (nutrient nitrogen); ammonia (NH_3) acid deposition (acidity), sulphur dioxide (SO_2

5.5 Oxides of nitrogen (NOx) in the atmosphere are one of two measures of particular relevance regarding air quality impacts from vehicle exhausts and it is modelled using standard forecasting. In extreme cases NOx can be directly toxic to vegetation but its main importance is as a source of nitrogen, which is then deposited on adjacent habitats. The guideline atmospheric concentration advocated by Government for the protection of vegetation is 30 micrograms per cubic metre (µgm-3), known as the Critical Level, as this concentration relates to the growth effects of nitrogen derived from NOx on vegetation.

5.6 The second most relevant metric in air pollution from vehicle exhausts is the rate of the resulting nitrogen deposition. The addition of nitrogen is a form of fertilization, which can have a negative effect on heathland and other habitats over time by encouraging more competitive plant species that can force out the less competitive species that are more characteristic. Unlike NOx in

atmosphere, the nitrogen deposition rate below which we are confident effects would not arise is different for each habitat. The rate (known as the Critical Load) is provided on the UK Air Pollution Information System (APIS)[20] and is expressed as a quantity (kilograms) of nitrogen over a given area (hectare) per year (kgNha-1yr-1).

5.7 Ammonia (NH_3),ecologically differs from NOx in that it is not only a source of nitrogen but can also be directly toxic to vegetation in relatively low concentrations. Using the process set out in Design Manual for Roads and Bridges, ammonia emissions for traffic are not normally calculated. However, in regard to both atmospheric concentrations and as a source of nitrogen they have been included in the AECOM modelling for completeness and consistency with modelling being undertaken in other Local Authorities[21].

5.8 Ammonia is a highly reactive and soluble alkaline gas. It originates from both natural and anthropogenic sources, with the main source being agriculture, e.g. manures, slurries and fertiliser application. Ammonia is also emitted from a range of non-agricultural sources, such as catalytic converters in petrol cars, landfill sites, sewage works, composting of organic materials, combustion, industry and wild mammals and birds[22].

5.9 Acid deposition derives from both sulphur and nitrogen. It is expressed in terms of kiloequivalents (keq) per hectare per year. The thresholds against which acid deposition are assessed are referred to as the Critical Load Function. The principle is similar to that for a nitrogen deposition Critical Load but it is calculated very differently.

5.10 Emissions of primary pollutants contributing to acid deposition have reduced substantially since the 1980s, mainly in response to international control measures (e.g. UNECE Convention on Long-range Transboundary Air Pollution (CLRTAP), and, more recently, the EU National Emission Ceilings Directive (NECD)).

5.11 Finally, Sulphur Dioxide (SO_2) emissions are primarily derived from electricity generation, industrial and domestic fuel combustion. Total SO_2 emissions have decreased substantially, and continue on a downward trend. Background level concentrations of SO_2 in the UK have fallen so much that there is no longer a

[20] www.apis.ac.uk
[21] Ashdown Forest SAC in Wealdon District Council
[22] Sutton, M.A.; Dragosits, U.; Tang, Y.S.; Fowler, D. 2000 Ammonia emissions from non-agricultural sources in the UK. Atmospheric Environment 34 855 – 869; Wilson, L. J.; Bacon, P. J.; Bull, J. ; Dragosits, U.; Blackall, T. D.; Dunn, T. E.; Hamer, K. C.; Sutton, M. A.; Wanless, S. 2004 Modelling the spatial distribution of ammonia emissions from seabirds in the UK Environmental Pollution 131 173-185

threat to plant health. For this reason SO_2 has not been ecologically modelled but has been included for completeness.

Air Pollution Information Systems data

5.12 The Air Pollution Information System[23] data allows deposition critical loads[24], levels[25] and pollutant concentration averages to be assessed at for specific designated sites (i.e. Natura 2000 sites; SSSI's). The data are for the 5km grid square within which the site is situated. So this provides a broader scale assessment and therefore cannot be considered without the results from AECOM's ecological modelling. It is however, still useful to use this tool to provide a context for current exceedance[26] levels (see Appendix 8).

5.13 Exceedance of a critical level (for NOx) or critical load (for nitrogen deposition) does not mean that an adverse effect on the habitats for which the SAC is designated is arising. However, it does mean that the potential certainly exists for such an effect.

5.14 Furthermore Natural England advises that the fact a site is already exceeding its critical load on APIS does not necessarily mean that the plan is likely to cause likely significant effects on air pollution grounds. This corroborates the view of the Joint Nature Conservation Committee[27]. What needs to be considered is whether there is a risk of a likely significant effect to occur due to development proposed by the DMP and to consider if it is necessary to take account of the additional pollution attributable to the DMP and the background trend in air quality within the zone affected by road traffic.

AECOM Data and Methodology

5.15 The Council commissioned AECOM to conduct detailed air quality ecological modelling for the three Natura 2000 sites identified in the screening stage requiring appropriate assessment: Mole Gap to Reigate Escarpment SAC; Thames Basin Heath SPA and Wimbledon Common SAC. The AECOM reports are available in full on the

[23] APIS www.apis.ac.uk
[24] Critical Loads are defined as: "a quantitative estimate of 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" (Source: http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm)
[25] Critical levels are defined as "concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge". (Source: http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm)
[26] Exceedance - breach of environmental protection standards by exceeding allowable limits or concentration levels.
[27] Paragraph 4.1 http://jncc.defra.gov.uk/pdf/ap_NassessmentarticleforNFCs210611.pdf

Council's DMP examination webpage and should be read in conjunction with this Appropriate Assessment. See Appendix 9 for the full results from the ecological modelling. It should be noted that the same modelling methodology described was used for each of the assessed Natura 2000 sites. The predicted levels of oxides of nitrogen (NOx); nitrogen deposition; ammonia and acid deposition were calculated using information on total traffic flow, average vehicle speeds and percentage Heavy Duty Vehicles (which influence the emissions profile), at receptor points along each modelled road link (see Figure 19, 24 and 29).

5.16 The predictions for NOx and nitrogen deposition are based on the assessment methodology presented in the Design Manual for Roads and Bridges (DMRB)[28], for the assessment of impacts on sensitive designated ecosystems due to highways works. Background data for NOx and NO_2 were sourced from Department of Environment, Food and Rural Affairs (Defra) background maps. Background data for ammonia was sourced from the UK Air Pollution Information System (APIS) website.

5.17 The DMRB does not provide a method for forecasting ammonia emissions from traffic. AECOM devised a modelling methodology for this HRA/AA in order to be consistent with the modelling undertaken at Ashdown Forest SAC.

5.18 To account for dispersion model bias, the predicted road contribution output from the model was adjusted by a factor of 3 for both NH3 and NO_2 to produce the results, with consequential effects on the nitrogen and acid deposition rates. It represents an intentionally conservative adjustment factor in lieu of site-specific NO_2 or NH3 monitoring data with which to verify the model. It could therefore prove to be an overestimate, particularly for NOx (and thus nitrogen deposition).

5.19 Given that the assessment year (2033) is a considerable distance into the future, it is important for the air quality calculations to take account of improvements in background air quality and vehicle emissions that are expected nationally over the plan period. Making an allowance for a realistic improvement in background concentrations and deposition rates is in line with the Institute of Air Quality Management (IAQM) position as well as that of central government. Background nitrogen deposition rates were sourced from the Air Pollution Information System (APIS) website.

5.20 Therefore, the air quality calculations assume that conditions in 2023 (an approximate midpoint between the base year and the year of assessment) are

[28] Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Part 1, Annex F (HA207/07)

representative of conditions in 2033 (the year of assessment). The effect on the 2033 data is equivalent to assuming a 0.75% per annum improvement in background NOx concentrations and nitrogen deposition rates between 2017 and 2033. The approach of not assuming all projected improvements occur (known as Gap Analysis) is accepted within the professional air quality community and accounts for known recent improvements in vehicle technologies (new standard Euro 6/VI vehicles), whilst excluding the more distant and therefore more uncertain projections on the evolution of the vehicle fleet. No discussion is made in this analysis of the UK Government's recent decision to ban the sale of new petrol and diesel vehicles from 2040 since it would not affect the time period under consideration, but that announcement illustrates the general long-term direction of travel for roadside air quality in the UK and underlines that allowing for improvements in both vehicle emissions factors and background rates of deposition over long timescales is both appropriate and realistic.

5.21 Annual mean concentrations of NOx were calculated at varied intervals back from each road link up to a maximum of 200m, with the closest distance being the closest point of the designated site to the road. Predictions were made using the latest version of ADMS-Roads using emission rates derived from the Defra Emission Factor Toolkit, which utilises traffic data in the form of 24-hour Annual Average Daily Traffic (AADT), %HDV and average speed. Appendices in the reports available on the Council webpage present the calculated changes in ammonia and NOx concentration and nitrogen deposition 'in combination' (i.e. the difference between Do Something and the 2017 Base case) and the role played by Local Plan development compared to that which would occur in any case over the plan period (i.e. the difference between Do Something and Do Minimum). It also shows the 'Projected Baseline'. This is the modelled NOx concentrations in the hypothetical scenario of no traffic growth to 2033 but allowing for improvements in vehicle emissions for the existing traffic and an associated reduction in background nitrogen deposition. It is presented such that the additional NOx emissions due to traffic growth can be visually separated from the reduction in NOx concentrations due to the improving baseline.

Mole Gap to Reigate Escarpment SAC

APIS background information

5.22 Figure 18 summarises information provided by APIS in relation to levels of pollutants at five sample locations, and gives an assessment of whether at these broad locations whether the principle habitat type is currently in exceedance, part exceedance or not in exceedance of each pollutant (see Appendix 8 for more detail)

Figure 18 current exceedance levels as provided by APIS for SSSI units within Mole Gap to Reigate Escarpment SAC

Mole Gap to Regiate Escarpment SAC - Reigate Hill (Unit 25) **Easting = 525535, Northing = 152089**	
Pollutant	***Fagus woodland (beech) (G1.6[29])***
Nitrogen Deposition	In exceedance
Nitrogen Oxides	In exceedance
Ammonia	Partly exceedance
Acid Deposition	No exceedance
Sulphur Dioxide	No exceedance

Mole Gap to Regiate Escarpment SAC – Dawcombe SSSI (Unit 36) **Easting =** 521396**, Northing =** 152413	
Pollutant	***Sub-atlantic semi-dry calcareous grassland (E1.26)***
Nitrogen Deposition	In exceedance
Nitrogen Oxides	No exceedance
Ammonia	Partly exceedance
Acid Deposition	No exceedance
Sulphur Dioxide	No exceedance

Mole Gap to Regiate Escarpment SAC – Dawcombe Wood SSSI (Unit 35 **Easting = 521276, Northing = 152676**	
Pollutant	***Broadleaved deciduous woodland (G1)***
Nitrogen Deposition	In exceedance
Nitrogen Oxides	In exceedance
Ammonia	Partly exceedance
Acid Deposition	No exceedance
Sulphur Dioxide	No exceedance

[29] EUNIS (the European Nature Information System) code was updated in 2017 – however APIS still uses the pre 2017 coding which is used in this report for consistency more information available https://eunis.eea.europa.eu/

5.23 APIS information indicates that the woodland areas of the SAC (within Unit 25, and Unit 35) are currently in exceedance in terms of both critical load for nitrogen deposition and critical level for nitrogen oxides (NOx). As expected acidity and sulphur levels are not in exceedance across the SAC. The areas of calcareous grassland (Unit 36/23) are currently in exceedance of critical load nitrogen deposition levels but not in exceedance of the critical level for NOx.

AECOM Modelling results for Mole Gap to Reigate Escarpment SAC

5.24 The map below (Figure 19) shows the location of the eight receptor points that modelled in the Mole Gap to Reigate Escarpment SAC (the results form Appendix 9). Figure 20 presents the SSSI Unit that the transect/s are located within. This provides the context for analysis and specifies the link road(s) that the transect is on; the SSSI unit reference number; the principle habitat type and its conservation status (more information is provided in Appendix 7).

Figure 19 Mole Gap to Reigate Escarpment modelled transects

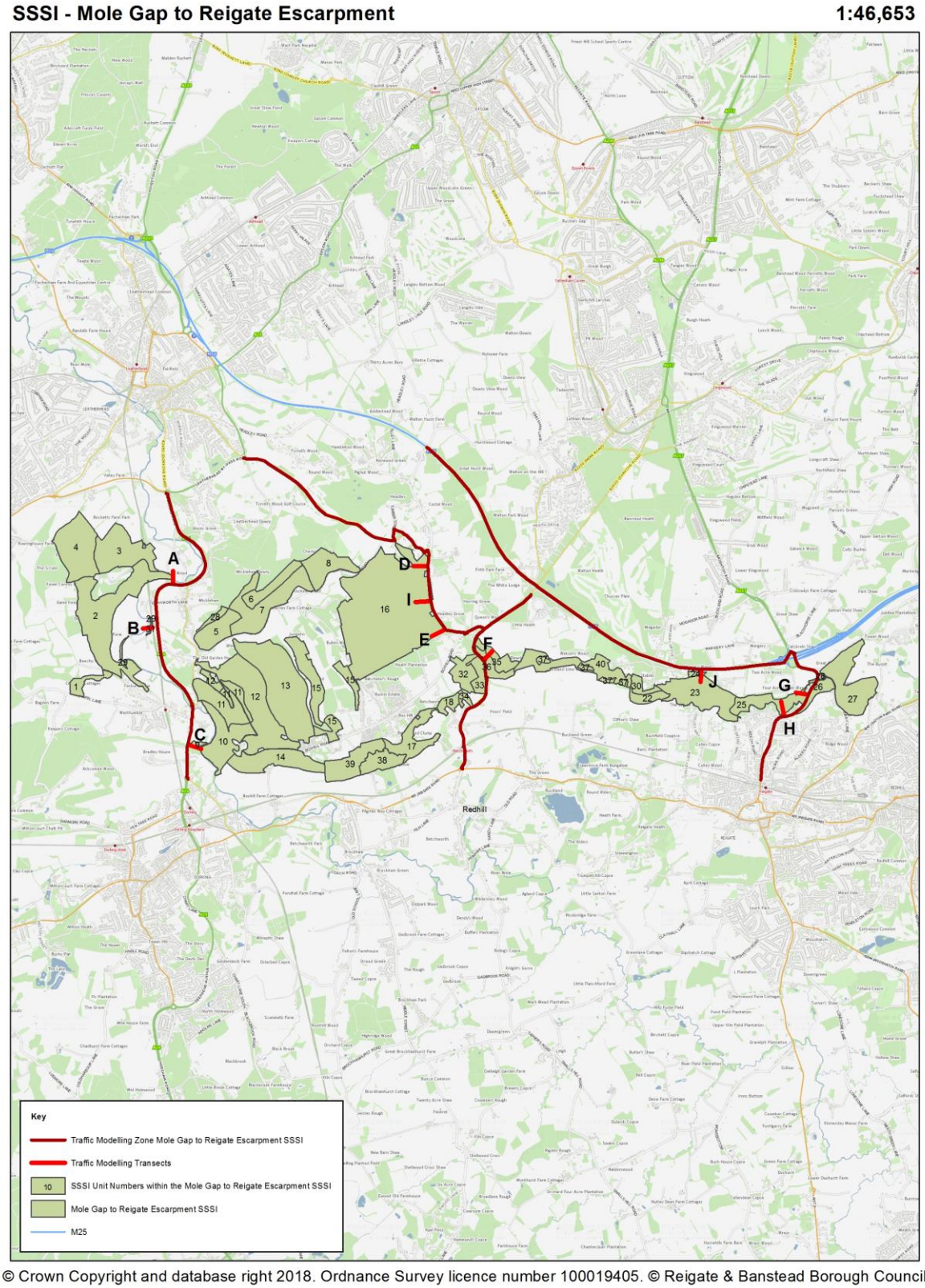


Figure 20 Road Links and transect points within SSSI units in Mole Gap to Reigate Escarpment SAC

Road Link	Receptor	SSSI Unit	Status	Habitat
B2033 (North) and (South)	D, E, I	16 - Headley Heath	Unfavourable - recovering	Broadleaved, Mixed And Yew Woodland - Lowland
B23033 (Pebble Hill)	F	35 – Dawcombe Wood	Favourable	Broadleaved, Mixed And Yew Woodland - Lowland
B23033 (Pebble Hill)	F	36- Dawcombe	Unfavourable - recovering	Calcareous Grassland - Lowland
A217	G, H	25 – Reigate Hill NT	Unfavourable - recovering	Broadland mixed and yew woodland
M25	J	23 – Colley Hill	Unfavourable - recovering	Calcareous grassland

Road Link M25 – Receptor J

5.25 The SAC is located 70m from the M25 at its closest point (most of the SAC is 100m or more from the M25). Within the SAC boundary the closest SSSI Management Unit to the M25 is Unit 23. The principal habitat in this unit is lowland calcareous grassland. In December 2017 the consultancy RPS undertook an HRA/AA screening exercise for the Gatwick Runway 2 project that examined the potential for effects on this part of the SAC. That report cited an ecological survey of Mole Gap to Reigate Escarpment within 200m of the M25 that was undertaken in June 2017.

5.26 In summary, the key finding of this survey work, amended in accordance with comments provided by Natural England, was that: ‘based on the survey work carried out by RPS, this report concludes that the grassland within 200m of the M25 is currently of a condition unlikely to support SAC quality orchidaceous rich grasslands. Therefore, there is no potential effect for increase in traffic on the

M25, as a result of LGW-2R, to have a significant effect with respect to the Annex 1 priority habitat important orchid sites'. The same report also cited Natural England as confirming that neither natural box scrub nor yew-dominated woodland occur within Unit 23 (that located within 200m of the M25). There is also no heathland within the relevant part of the SAC. This was used as a basis to screen out air quality impacts of traffic growth on the M25 on the international interest features of the SAC.

5.27 Moreover, even with the forecast 'in combination' traffic growth to 2033 there is modelled to be a net reduction in nitrogen deposition of c. 1.8kgN/ha/yr at the closest point of the SAC to the M25 due to improvements in vehicle emission factors and reduction in background NOx concentrations and nitrogen deposition rates. As such, it is considered that traffic growth on the M25 will not result in a likely significant effect on the SAC due to the absence of SAC quality interest features within 200m of the M25 and the fact that the affected area will experience a net improvement in air quality to 2033.

5.28 The M25 is therefore not discussed further in this report which concentrates on the A217 Reigate Hill and the B2032 Pebble Hill.

Road links A217 and B2032 Receptors G & F

5.29 The key ecological findings of the modelling are presented in Figure 21 and are discussed in more detail below.

Figure 21 Mole Gap to Reigate Escarpment SAC - key ecological findings in the transport modelling

Link/Receptor	Habitat (associated SSSI Management Unit)	SSSI Unit Status	Baseline NOx and nitrogen[30]	Further NOx and nitrogen deposition due to all additional traffic 'in combination'[2]	Contribution of Reigate & Banstead Local Plan to further NOx and nitrogen[2]	Summary of net change in deposition rate to 2033 taking account of both additional traffic and a forecast improving baseline
A217 Reigate Hill (worst-case Receptor G)	Woodland (Management Unit 27)	Favourable	NOx: 120.76 μgm^{-3} at roadside, dropping below critical level by 70m from road Nitrogen: 22.47 kgN/ha/yr at the roadside, remaining above the critical load throughout the transect	NOx: 23.86 μgm^{-3} at roadside, dropping to 1.62 μgm^{-3} by 200m from the road Nitrogen: 2.42 kgN/ha/yr at the roadside, reducing to c. 1kgN/ha/yr by 80m from the road	NOx: 7.87 μgm^{-3} at roadside, dropping to 0.5 μgm^{-3} by 200m from the road Nitrogen: 0.82 kgN/ha/yr at the roadside, reducing to 0.44 kgN/ha/yr by 160m from the road	**Net roadside reduction in deposition** of 1.95 kgN/ha/yr compared to baseline, even allowing for projected traffic growth
B2032 Pebble Hill (Transect F)	Calcareous grassland (Management Unit 36) Woodland (Management Unit 35)	Unfavourable recovering Favourable	NOx: 112.45 μgm^{-3} at roadside, dropping below critical level by 45m from road Nitrogen: 23.89 kgN/ha/yr at the roadside, remaining above the critical load throughout the transect	NOx: 17.11 μgm^{-3} at roadside, dropping to 1.31 μgm^{-3} at 200m from the road Nitrogen: 2.19 kgN/ha/yr at the roadside dropping below 1kgN/ha/yr by 15m from the roadside and dropping further to 0.5 kgN/ha/yr by 115m from the roadside	NOx: 1.2 μgm^{-3} at roadside, dropping to a negligible 0.09 μgm^{-3} by 200m from the road Nitrogen: 0.14 kgN/ha/yr at the roadside, declining to a negligible 0.08 kgN/ha/yr by 10m from the roadside	**Net roadside reduction in deposition** of 1.51 kgN/ha/yr compared to baseline, even allowing for projected traffic growth

[30] Note that a precautionary adjustment factor of 3 has been applied to the outputs of the modelling software rather than the more typical factor of 1.5 normally used in rural locations. Therefore these numbers may overestimate deposition or concentrations, and monitoring for purposes of model calibration is therefore recommended.

5.30 The habitats within 200m of the A217 and B2032 are primarily woodland but also (along the B2032) calcareous grassland. The SAC woodlands of Mole Gap to Reigate Escarpment are either yew woodland or beech forest. No critical level is suggested on APIS for beech woodland since the lichen and bryophyte interest of such habitat varies greatly.

5.31 The higher critical level of 3μm^{-3} is provided for yew woodland on the basis that these woodlands rarely have significant lichen flora. APIS associates calcareous grassland with a critical level for ammonia of 1 μm^{-3} because that threshold is automatically assigned to all habitats which can contain rare and/or diverse bryophytes and lichens, depending on circumstances and location. However, literature indicates that an interesting terricolous lichen flora will generally only develop in calcareous grasslands where the grassland sward (the SAC feature) has itself been damaged, exposing bare ground for lichen colonisation. The calcareous grasslands of the underlying SSSI are noted for their higher plants (particularly orchids) but not for their terricolous lichen interest, with the exception of 'Areas of open turf at Burford Bridge Ridge and Juniper Top [which] support a rich lichen flora with many noteworthy species including *Toninia caeruleonigricans* and Verrucaria mutabilis'. Both of these locations are remote from the A217 and B2032. Even when present, lichens, while of interest in themselves, are rarely integral to the conservation status of the calcareous grassland sward for the reasons already cited. For this analysis therefore the critical level of 3 μm^{-3} is used as a reference threshold for the parts of the SAC within 200m of the A217 and B2032.

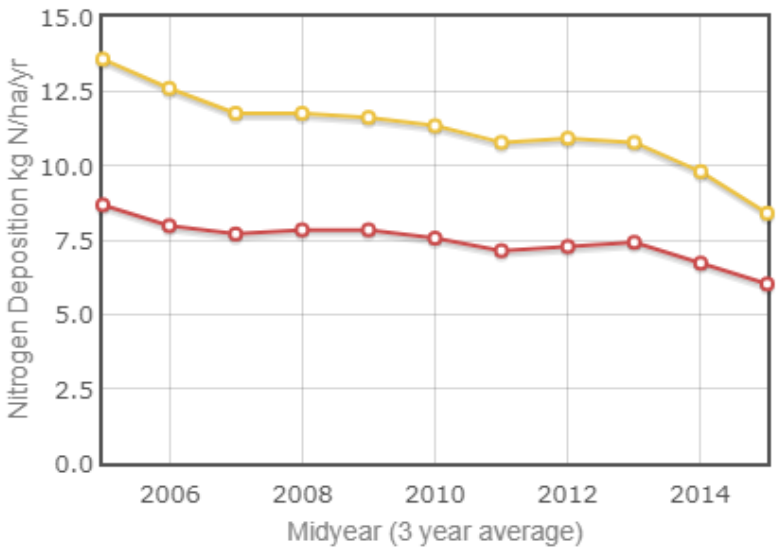
5.32 On both the B2032 and A217 the 'in combination' NOx emissions and nitrogen deposition rates exceed 1% of the critical level/load throughout the modelled transect. However, on the B2032 the contribution of growth in Reigate & Banstead is sufficiently small (c. 1% of the critical load for nitrogen deposition at the roadside, falling to a negligible level by 10m from the roadside) that it will not play any meaningful role retarding the expected improvement.

5.33 On the A217 the contribution of Reigate & Banstead growth is greater and the total 'in combination' nitrogen dose is sufficiently great within 75m of the roadside (1-2 kgN/ha/yr) that published dose-response relationships suggest any vegetation recovery associated with the net improvement in nitrogen deposition to 2033 might be slightly more limited within 75m of the A217 than it would in a situation without any forecast traffic growth. However, even the worst-case outcome is relatively subtle (i.e. recovery in species richness being 1 species less than might otherwise be the case), the most affected location would be a band along the roadside with the rest of the SAC entirely unaffected and there is a distinct possibility that confounding factors (particularly related to canopy cover) could well prevent any vegetation effect from actually arising or being detectable.

5.34 Most importantly, however the deposition from the additional traffic (irrespective of source) is forecast to be offset by a much larger reduction in background deposition over the same timescale due to improved vehicle emission factors. As a result a net reduction in deposition of 1.5 - 2 kgN/ha/yr (depending on link) is actually forecast at the roadside notwithstanding traffic growth. Additional traffic (irrespective of source) is forecast to be offset by a much larger reduction in background deposition over the same timescale due to improved vehicle emission factors. As a result a net reduction in deposition of 1.5 - 2 kgN/ha/yr (depending on link) is actually forecast at the roadside notwithstanding traffic growth.

5.35 Therefore by 2033, NOx concentrations on both the B2032 and A217 are forecast to experience a large net reduction due to changes in vehicle emissions, notwithstanding the projected increase in traffic on both roads, including that attributable to the DMP. This follows on from the current overall downward NOx deposition trends taken from APIS as shown in Figure 22.

Figure 22 Mole Gap to Reigate Escarpment SAC Deposition to Forest NOx (yellow line) and Moorland (short-vegetation) NOx (red line)



Summary –No adverse effects on integrity of Mole Gap to Reigate Escarpment

5.36 The modelling demonstrates that there will be a net decrease in nitrogen deposition to SAC habitats along the modelled links, notwithstanding the precautionary assumptions made in the modelling concerning improvements in NO_2 emission factors. Accordingly, growth to 2033 will not have a significant in-combination adverse effect on the integrity of the SAC by way of contributing to any net increase in nitrogen deposition. Therefore, the DMP will not prevent the SAC achieving its conservation objectives, even where those objectives involve seeking a net improvement in the conservation status of the SAC. However

the Council will work with other local authorities (particularly Mole Valley District Council and Tandridge District Council), land managers, and strategic highway authorities to develop a framework by which forecast improvements in roadside air quality along the A217 Reigate Hill can be monitored. This will help to confirm that forecast improvements are occurring as predicted, and to facilitate introduction of supplementary measures beyond those that will already be implemented by Core Strategy policy CS17 This is in line with the approach to the same issue being undertaken by other Surrey authorities in their Core Strategies and Local Plans with regard to Thames Basin Heaths SPA.

Thames Basin Heaths SPA

APIS background information

5.37 Figure 23 summarises information provided by APIS in relation to levels of pollutants at four sample locations, and gives an assessment of whether at these broad locations the principle habitat type is currently in exceedance, part exceedance or not in exceedance of each pollutant (see Appendix 8 for more detail)

Figure 23 current exceedance levels as provided by APIS for SSSI units within Thames Basin Heath SPA.

Thames Basin Heath SPA Ockham and Wisley Commons SSSI - Boldermere (Unit 7) **Easting = 507769, Northing = 158586**	
Pollutant	*Northern wet heath: Erica tetralix dominated wet heath (F4.11)**)***
Nitrogen Deposition	In exceedance
Nitrogen Oxides	In exceedance
Ammonia	Partly exceedance
Acid Deposition	In exceedance
Sulphur Dioxide	No exceedance

Thames Basin Heath SPA Ockham and Wisley Commons SSSI - Wisley Common (W) (Unit 5) **Easting =** 506946**, Northing =** 158197	
Pollutant	*Northern wet heath: Erica tetralix dominated wet heath (F4.11)**)***
Nitrogen Deposition	In exceedance
Nitrogen Oxides	In exceedance

Ammonia	Partly exceedance
Acid Deposition	In exceedance
Sulphur Dioxide	No exceedance

Thames Basin Heath SPA- Ockham and Wisley Commons SSSI - OCKHAM COMMON (Unit 9) Easting = 508110, Northing = 159070	
Pollutant	*Northern wet heath: Erica tetralix dominated wet heath (F4.11)**)***
Nitrogen Deposition	In exceedance
Nitrogen Oxides	In exceedance
Ammonia	Partly exceedance
Acid Deposition	In exceedance
Sulphur Dioxide	No exceedance

5.38 APIS results have focused on the qualifying habitat of heathland across the site there is an exceedance or part exceedance in all pollutants (with the exception of Sulphur dioxide[31]).

AECOM Modelling results for Thames Basin Heaths SPA

5.39 The map below (Figure 24) shows the location of six receptor points that were modelled in the Thames Basin Heaths SPA (the results form Appendix 9). Figure 25 presents the SSSI Unit that the transect/s are located within. This provides the context for analysis and specifies the link road(s) that the transect is on; the SSSI unit reference number; the principle habitat type and its conservation status (more information is provided in Appendix 7).

[31] Concurrent with national trends

Figure 24 Map of modelled transects

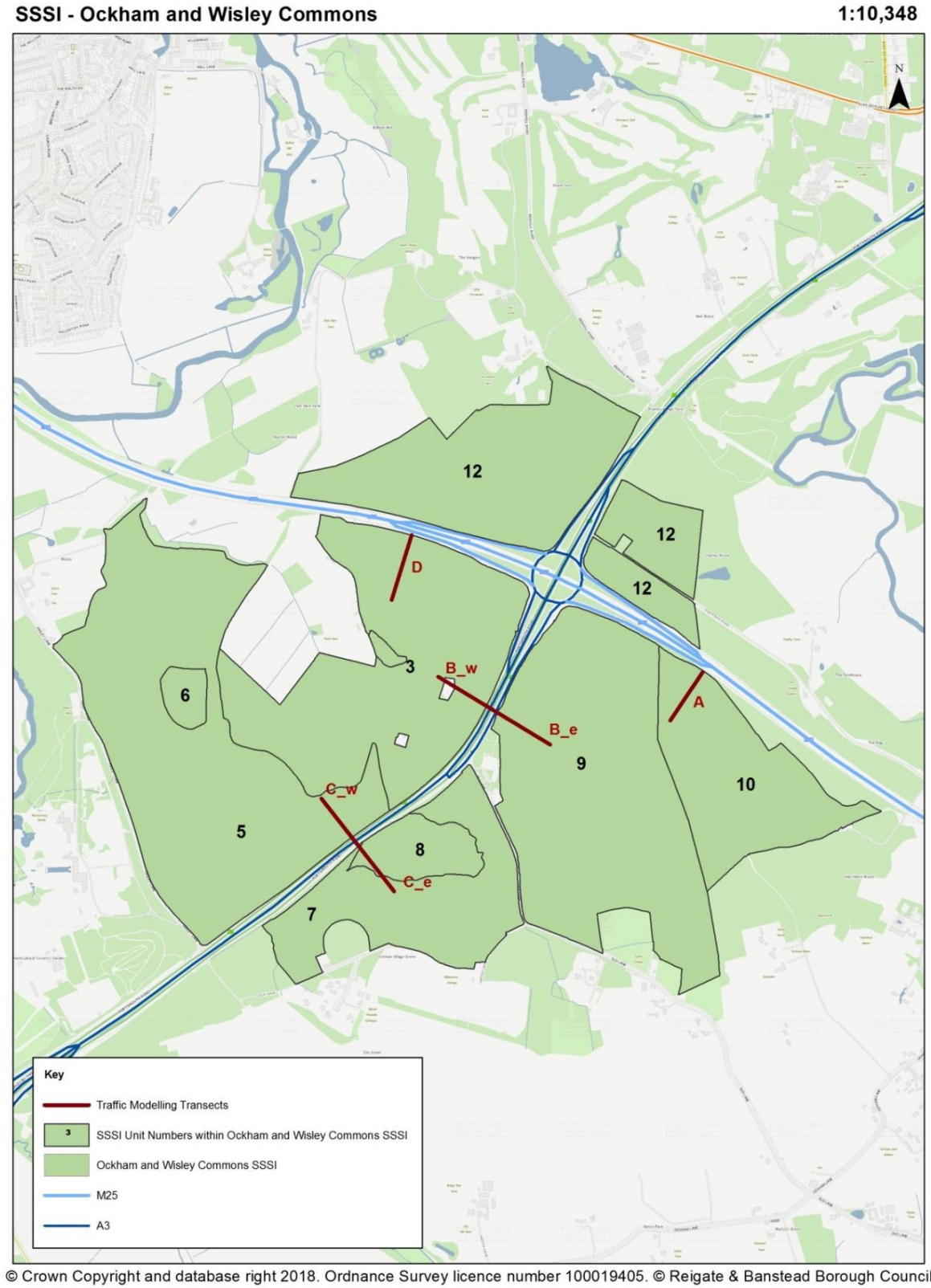


Figure 25 Road Links and transect points within SSSI units in Thames Basin Heath SPA

Road	Transect	SSSI Unit	Status	Habitat
M25	A	Ockham And Wisley Commons – Chately Heath (010)	Favourable	DWARF SHRUB HEATH - Lowland
A3	B_w	Ockham And Wisley Commons SSSI - WISLEY COMMON (E) (003)	Un-Favourable Recovering	DWARF SHRUB HEATH - Lowland
A3	B_e	Ockham Common (009)	Unfavourable - Recovering	Dwarf Shrub Heath - Lowland
A3	C_w	Wisley Common (W) (005)	Favourable	Dwarf Shrub Heath - Lowland
A3	C_e	Ockham And Wisley Commons SSSI - Bolder Mere (007)	Unfavourable - Recovering	Dwarf Shrub Heath - Lowland
		Ockham And Wisley Commons SSSI - Bolder Mere Lake (008)	Favourable	Standing Open Water And Canals
M25	D	Ockham And Wisley Commons SSSI - WISLEY COMMON (E) (003)	Un-Favourable Recovering	Dwarf Shrub Heath - Lowland

5.40 Areas of the SPA with principle habitat type of dwarf shrub heath currently vary in 'favourable' conservation status. This is to be expected due to differing levels of plantation and management. The fragmentation of the units has an impact on conservation status. Ockham and Wisley Commons SSSI – Boldermere unit 007 (transect C-e) (a smaller fragment East of A) is unfavourable/recovering, whereas Ockham and Wisley Commons SSSI – Wisley Common (W) (Unit 5) (a larger fragment to the West of A3) is currently favourable.

Road Links M25 & A3 - findings

5.41 The key ecological findings of the modelling are presented in Figure 26 and are discussed in more detail below.

Figure 26 Thames Basin Heath SPA - key ecological findings

Link/Transect	Habitat (associated SSSI Management Unit)	SSSI Unit Status	Baseline NOx and nitrogen[2]	Further NOx and nitrogen deposition due to all additional traffic 'in combination'[2]	Contribution of Reigate & Banstead Local Plan to further NOx and nitrogen[2]	Summary of net change in deposition rate to 2033 taking account of both additional traffic and a forecast improving baseline
A3 (worst-case Transect Cw)	Heathland (Management Units 3, 5, 7 and 9) Habitat is not an interest feature of the SPA	Mixture of Favourable and Unfavourable recovering	NOx: 236.67 μgm^{-3} at roadside, remaining above critical level throughout transect Nitrogen: 20.34 kgN/ha/yr at the roadside, dropping to the critical load by 30m from the roadside	NOx: 22.11 μgm^{-3} at roadside, dropping to 2.11 μgm^{-3} by 200m from the road Nitrogen: 2.4 kgN/ha/yr at the roadside, reducing to 0.28 kgN/ha/yr by 200m from the road	NOx: 1.08 μgm^{-3} at roadside, dropping to 0.12 μgm^{-3} by 200m from the road Nitrogen: 0.12 kgN/ha/yr at the roadside, declining to a negligible 0.09 kgN/ha/yr by 5m from the roadside	**Net roadside reduction in deposition** of 0.72 kgN/ha/yr compared to baseline, even allowing for projected traffic growth
M25 (worst-case Transect D)	Heathland (Management Units 3, 9 and 12) Habitat is not an interest feature of the SPA	Unfavourable recovering	NOx: 200.58 μgm^{-3} at roadside, dropping below critical level by 175m from road Nitrogen: 20.14 kgN/ha/yr at the roadside, dropping to the critical load by 30m from the roadside	NOx: 13.25 μgm^{-3} at roadside, dropping to 0.61 μgm^{-3} by 200m from the road Nitrogen: 5.54 kgN/ha/yr at the roadside, reducing to 0.37 kgN/ha/yr by 200m from the road	NOx: 1.37 μgm^{-3} at roadside, dropping to 2.58 μgm^{-3} by 15m from the road Nitrogen: 0.19 kgN/ha/yr at the roadside, declining to a negligible 0.08 kgN/ha/yr by 30m from the roadside	**Net roadside reduction in deposition** of 0.65 kgN/ha/yr compared to baseline, even allowing for projected traffic growth

5.42 The existing pollutant concentrations considerably exceed the critical levels for both ammonia (3 µgm-3) and NOx (30 µgm-3) throughout all modelled transects. In addition, the 'in combination' change in both ammonia emissions and NOx concentrations (column DS-ProjBL) exceeds 1% of the critical level for both pollutants throughout both transects.

5.43 Also the baseline modelled nitrogen deposition rate within 20-30m of the roadside (depending on transect/receptor) currently exceeds the minimum part of the critical load range for heathland or plantation woodland of 10 kgN/ha/yr. The 'in combination' nitrogen deposition within this area attributable to traffic growth ranges from 2-2.5 kgN/ha/yr at the roadside, to 1-1.5 kgN/ha/yr at 20m from the roadside, depending on transect. This is clearly well over 1% of the critical load but that metric is merely intended as an indicator of whether full dispersion modelling would be required. AECOM undertakes such modelling as a matter of course since there are few instances in which emissions/deposition rates due to total traffic growth over long timescales fall below 1% of the critical level/load. The contribution of housing and employment in Reigate & Banstead is small, being 0.25 kgN/ha/yr (2.5% of the critical load) at the most affected location.

5.44 However, notwithstanding the large additional nitrogen attributable to traffic growth, improvements in vehicle emission factors over the same timescale nonetheless mean that a net reduction in nitrogen deposition of between 0.96 kgN/ha/yr and 0.65 kgN/ha/yr (depending on transect) is forecast by 2033 even at the roadside of the M25 and A3. This is despite the fact that AECOM's modelling makes only a cautious allowance for improvements of 0.75% per annum in background nitrogen deposition rate over the period to 2033.

5.45 This means that, even if heathland was restored to this part of the SPA, it is expected that the overall management burden would reduce to 2033 rather than increase, despite growth in the volume of traffic. Most importantly, the modelling shows that total nitrogen deposition rates are forecast to have fallen below the critical load by 15-30m from the roadside (depending on link) by 2033 such that atmospheric nitrogen (irrespective of source) should cease having an influence on vegetation composition/structure at all except within a narrow band along both the A3 and M25. If the area was turned to managed plantation then the process of clearing and maintaining working forestry would have a much greater effect on the ability of the area to support SPA birds than nitrogen deposition.

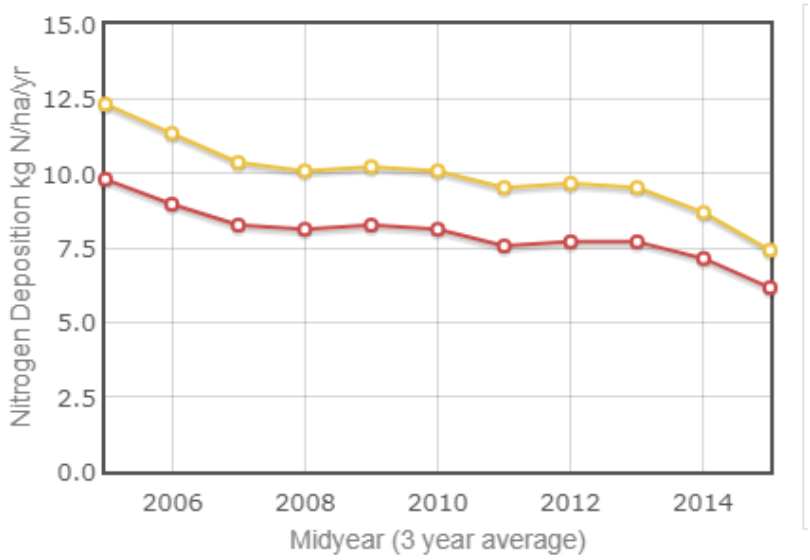
5.46 On the A3 and M25 the critical level for NOx is currently exceeded throughout the modelled transect, but the critical load for nitrogen deposition is/will be only exceeded up to 20-30m from the roadside. On both the A3 and M25 the 'in combination' NOx emissions and nitrogen deposition rates due to growth exceed 1% of the critical level/load throughout the modelled transect. Therefore

likely significant effects from all growth 'in combination' cannot be dismissed on numerical grounds and an appropriate assessment is required (as the 1% criterion is not a damage threshold).

5.47 However, in the appropriate assessment it is noted that the contribution of growth in Reigate & Banstead to the change in nitrogen deposition falls to virtually zero (0.08 kgN/ha/yr) beyond 30m from the roadside; the same distance at which nitrogen falls to the critical load.

5.48 Furthermore APIS shows a current overall downward NOx deposition trends as shown in Figure 27.

Figure 27 Thames Basin Heaths SPA Deposition to Forest NOx (yellow line) and Moorland (short-vegetation) NOx (red line)



Conclusion – No adverse effects on the integrity of Thames Basin Heath SPA

5.49 Nitrogen deposition rates are forecast to improve to 2033 notwithstanding traffic growth and therefore the management burden to keep any areas of heathland suitable for SPA birds is likely to decrease rather than increase. Nitrogen deposition rates are expected to have fallen below the critical load for heathland or managed plantation woodland by 2033 beyond 30m from the roadside. Although critical level for NOx is both currently and in the future predicted to exceed throughout the modelled transect on A3 and M25, the critical load for nitrogen deposition is/will be only exceeded up to 20-30m from the roadside.

5.50 It is therefore considered that a conclusion of 'no adverse effect' on the integrity of the Thames Basin Heaths SPA alone or 'in combination' with other project and plans can be drawn with considerable confidence.

Wimbledon Common SAC

APIS background information

5.51 Figure 28 summarises information provided by APIS in relation to levels of pollutants at five sample locations, and gives an assessment of whether at these broad locations the principle habitat type is currently in exceedance, part exceedance or not in exceedance of each pollutant (see Appendix 8 for more detail).

Figure 28 current exceedance levels as provided by APIS for SSSI units within Wimbledon Common SAC

Wimbledon Common SAC - Woodland Wandsworth SSSI (Unit 6) Easting = 522756**, Northing =** 173152	
Pollutant	*Broadleaved deciduous woodland (G1)*
Nitrogen Deposition	In exceedance
Nitrogen Oxides	In exceedance
Ammonia	Partly exceedance
Acid Deposition	In exceedance
Sulphur Dioxide	No exceedance

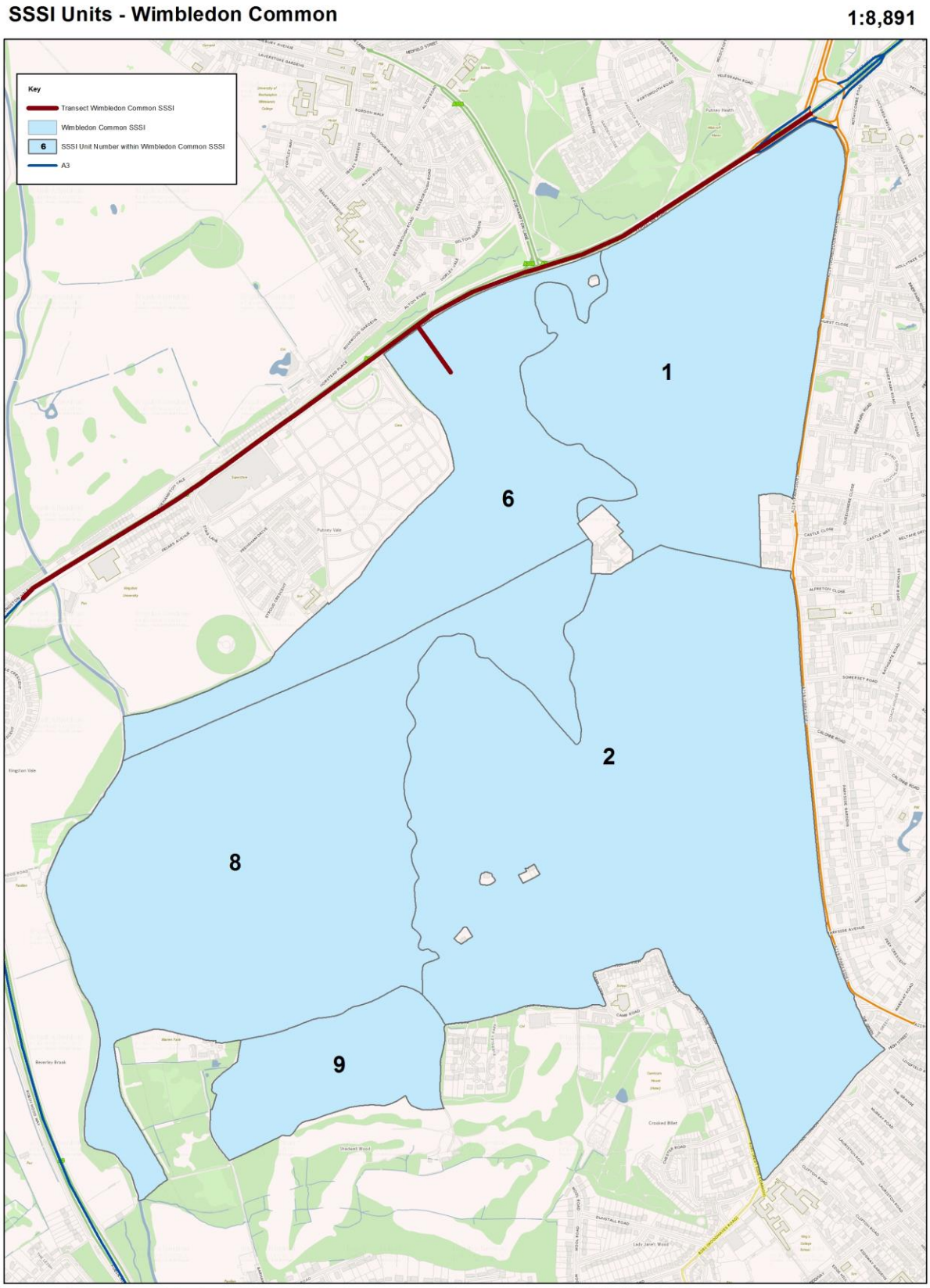
5.52 APIS information on Wimbledon Common SAC indicates that overall the SAC is in exceedance or in part exceedance in all pollutants (with the exception of Sulphur dioxide).

AECOM Modelling results for Wimbledon Common SAC

5.53 The predicted traffic flows on the A219 due to growth in Reigate & Banstead amounted to a total of 14 AADT by the end of the plan period, which is a nugatory amount. As such small changes in average flow lie well within the normal variation (known as the standard deviation or variance) of traffic flows on that road and would not constitute a statistically significant difference in the average, and no further ecological modelling was conducted.

5.54 One transect in Wimbledon Common was modelled from the A3 as shown in Figure 29. The receptor is within SSSI Woodland Wandsworth (Unit 6), which is predominately heathland and has a current unfavourable – recovering conservation status.

Figure 29 Wimbledon Common SAC modelled transects



5.55 Appendix 9 show the modelling results in detail. On the A3, the forecast change in traffic growth is small but not inherently nugatory, being 196 AADT by the end of the plan period. However, examination of aerial photography and habitat mapping indicates that the closest area of heathland to the A3 is 30m from the roadside. Given both the distance separating the A3 from the nearest area of heathland and the low change in flows attributable to growth in Reigate & Banstead, AECOM's experience of modelling other links suggests that such growth will make a negligible contribution to 'in combination' changes in NOx concentrations and (particularly) nitrogen deposition at that location. Moreover, this is very likely to be within a context of actual NOx concentrations and nitrogen deposition rates by 2033 being significantly better than those in 2017 due to forecast improvements in vehicle emission factors. This is verified by modelling undertaken by AECOM in May 2018. At 30m from the roadside the 'in combination' NOx emissions from traffic growth are forecast to be 3.11 µgm-3 (10% of the critical level of 30 µgm-3). Therefore likely significant effects from all traffic growth cannot be dismissed out of hand based purely on whether they fall below 1% of the critical level.

5.56 At 30m from the roadside, ammonia concentrations are currently 2.24 µgm-3 and thus below the critical level for vegetation. They are forecast to remain below the critical level by 2033 notwithstanding traffic growth. Moreover, the contribution of housing and employment growth in DMP is so small that it does not show in the modelling (since ammonia concentrations are only reported to 2 decimal places at most, to avoid false precision). Therefore, it can be concluded that there will be no likely significant effects due to ammonia emissions from Reigate & Banstead-linked traffic, even 'in combination'.

5.57 The key NOx and critical load for nitrogen deposition results are highlighted in Figure 29and summarised below.

Figure 30 Wimbledon Common SAC - key ecological findings

Link/Transect	Habitat (associated SSSI Management Unit)	SSSI Unit Status	Baseline NOx and nitrogen[2]	Further NOx and nitrogen deposition due to all additional traffic 'in combination'[2]	Contribution of Reigate & Banstead Local Plan to further NOx and nitrogen[2]	Summary of net change in deposition rate to 2033 taking account of both additional traffic and a forecast improving baseline
A3	Heathland (Management Unit 6)	Unfavourable recovering	NOx: 164.73 μgm^{-3} at roadside, dropping below critical level by 100m from road Nitrogen: 9.2 kgN/ha/yr at the roadside, thus being below the critical load throughout the transect	NOx: 13.25 μgm^{-3} at roadside, dropping to 0.61 μgm^{-3} by 200m from the road Nitrogen: 0.84 kgN/ha/yr at the roadside, reducing to a negligible 0.08 kgN/ha/yr by 125m from the road	NOx: 0.25 μgm^{-3} at roadside, dropping to a negligible 0.09 μgm^{-3} by 15m from the road Nitrogen: negligible 0.02 kgN/ha/yr even at the roadside	**Net roadside reduction in deposition** of 1.60 kgN/ha/yr compared to baseline, even allowing for projected traffic growth

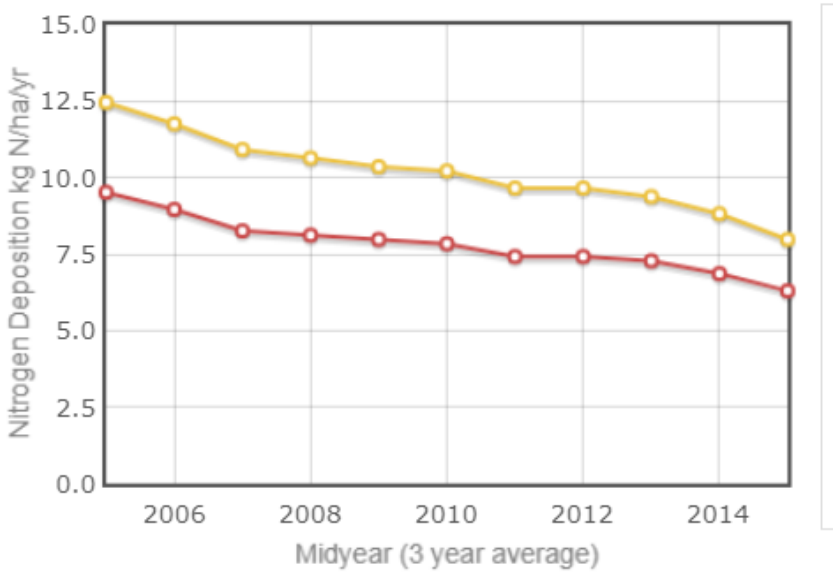
5.58 On the A3 the critical level for NOx the critical level for NOx and critical load for nitrogen deposition are currently exceeded up to 100m from the roadside. However, as paragraph 5.26 of Natural England's recently published internal guidance makes clear 'an exceedance alone is insufficient to determine the acceptability (or otherwise) of a project' and the critical level for nitrogen deposition is not exceeded now and will not be exceeded in the future at any point on the transect. The 'in combination' NOx emissions due to growth exceed 1% of the critical level throughout the modelled transect and the 'in combination' nitrogen deposition exceeds 1% of the critical load up to 50m from the roadside. Therefore likely significant effects from all growth 'in combination' cannot be dismissed on numerical grounds and an appropriate assessment is required (as the 1% criterion is not a damage threshold).

5.59 However, the contribution of growth in Reigate & Banstead that is predicted to the change in nitrogen deposition is effectively zero even at the roadside. As

such, Reigate & Banstead does not play any significant role in the 'in combination' change in nitrogen deposition and thus does not contribute to an adverse effect on the integrity of the SAC.

5.60 Furthermore APIS shows a current overall downward NOx deposition trends see Figure 31.

Figure 31 Wimbledon Common Deposition to Forest NOx (yellow line) and Moorland (short-vegetation) NOx (red line)



Conclusion – No adverse effects on the integrity of Wimbledon Common SAC

5.61 It can therefore be concluded with confidence that no adverse effects will arise on Wimbledon Common SAC due to housing and employment growth in Reigate & Banstead to 2033, even 'in combination' with other plans and projects.

Air Quality Ecological Modelling Conclusions

5.62 No adverse effects on the integrity to any of the Natura 2000 sites within the scope of this Appropriate Assessment.

5.63 Furthermore mitigating sustainable transport policies in both the adopted Core Strategy is CS17 -Travel options and accessibility and the proposed DMP policy is TAP 1: Access, parking and servicing are set to have a positive effect on emission levels.

5.64 It should also be noted that the modelling undertaken to inform this conclusion is precautionary. The Design Manual for Roads and Bridges and Defra guidance recommend making a 2% reduction per annum in background

emissions/deposition rates throughout the period from base year to assessment year in order to allow for improvements such as the introduction of Euro 6[32] standard vehicles. AECOM took a considerably more cautious approach in this modelling of halving the recommended rate of improvement, which could therefore prove to underestimate improvements in NOx and nitrogen deposition and over-estimate the NOx emissions and nitrogen deposition attributable to traffic growth.

5.65 This modelling takes no account of the Government's 2017 announcement to ban the sale of new petrol and diesel cars by 2040, or the possibility that this date may be brought forward. In practice this policy may result in replacement of aspects of the vehicle fleet by non-diesel or petrol vehicles at a date materially earlier than 2040 and this would have a significant effect on reducing NOx and ammonia emissions from traffic.

Bechstein's bats

5.66 In the screening process (Chapter 4) allocation sites and the policies were identified in Figures 12 and 15 as being within the 3.5km Core Sustenance Zone to protect the Mole Gap to Reigate Escarpment SAC 'functional linkage.'

5.67 Figure 32 shows the location of these sites and Figure 33 provides more detail in terms of allocation type, what is proposed (development type and scale) and the current features of the site. Also development requirements that are relevant to Bechstein's bat 'functional linkage'.

[32] Commission Regulation (EU) No 459/2012 of 29 May 2012 amending Regulation (EC) No 715/2007 of the European Parliament and of the Council and Commission Regulation (EC) No 692/2008 as regards emissions from light passenger and commercial vehicles (Euro 6)

Figure 32 Map showing policies/allocations within CSZ

RBBC DMP Site Allocations within the context of Mole Gap to Reigate Escarpment Core Sustenance Zone (Bat Conservation Trust, 2016) **1:20,000**

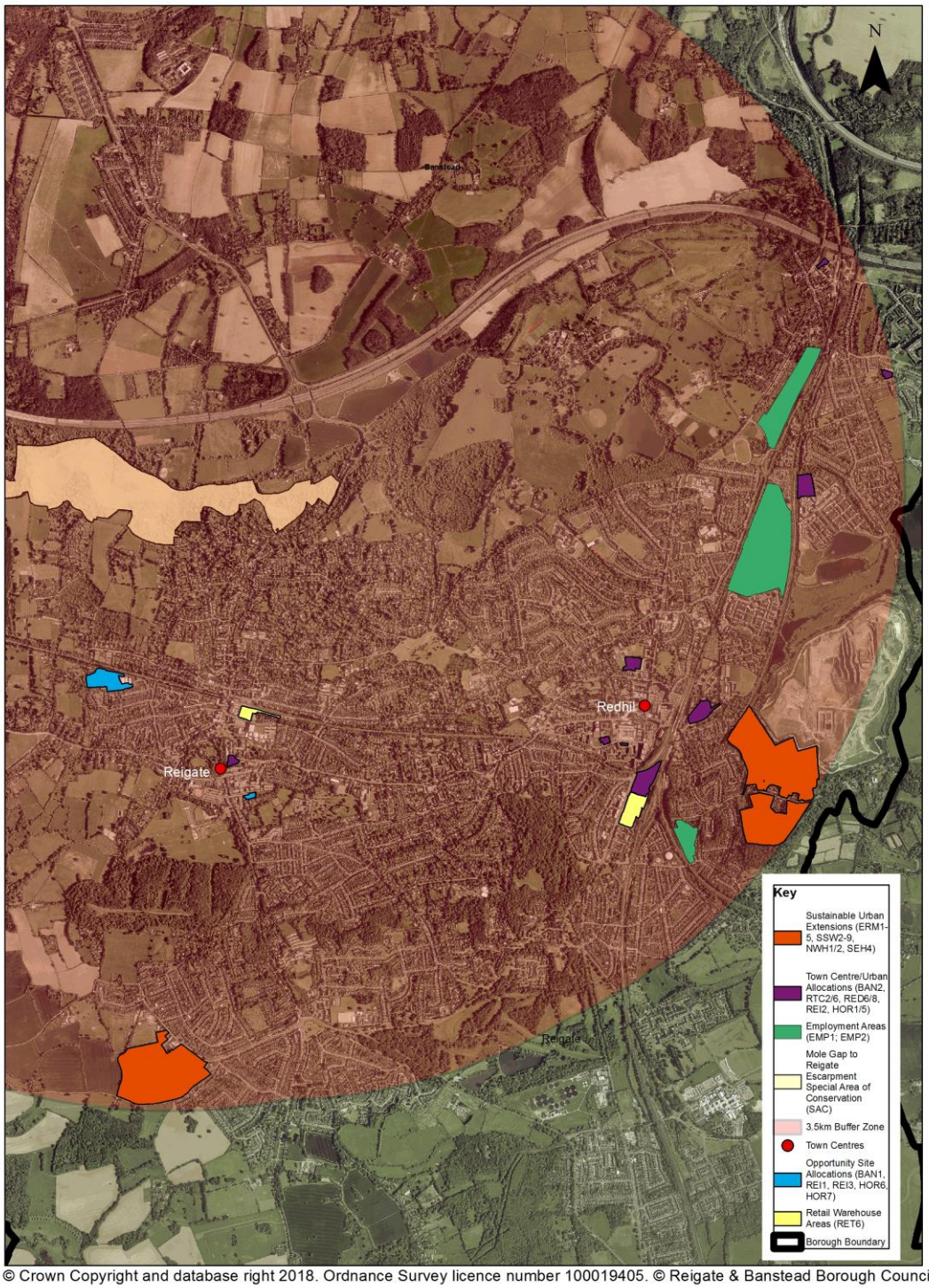


Figure 33 Detail of allocation sites within CSZ

Policy	Site location	Allocation type/size	Allocation Proposal	Implications/activities of proposal
Area 2a Redhill and Merstham				
RTC2	16-46 Cromwell Road, Redhill	Town centre site allocation/ 0.08ha	The site is for a mixed use development including enhanced ground floor retail, and residential at upper floors: • Retail, leisure or commercial: no net gain n floorspace; and • Residential: approximately 32 units (net 24). Development requirements and considerations: •Retention of active ground floor uses/frontages (retail/leisure/commercial) Measures to address and attenuate surface water flooding risk	This site is located within a highly accessible location and forms part of the proposed secondary shopping area in Redhill
RTC6	Gloucester Road Car Park, Redhill	Town Centre site allocation/ 0.76ha	Allocated for: • Residential and Office: approximately 2,500sqm office space and approximately 30 new homes; or • Residential only: Approximately 60 new homes; or • Offices only: Approximately 4,000 sqm • Parking: Potential for retention or on-site re-provision of some town centre parking capacity.	Surface public car park. Highly accessible location.

RTC4	Colebrook, Noke Drive, Redhill	Urban site allocation/ 1.47ha	Allocated for: • Residential: approximately 110 units; including potentially housing for older people; and • Community: new community uses, potentially including adult social care	Currently a mixed community services and garden centre. An opportunity for intensification of an existing previously developed site. The site is situated within a highly accessible location, in close proximity to Redhill town centre and adjacent to the rail station Requirement to design to retain existing trees and enhance landscaping and green infrastructure on site.
RTC5	Former Longmead Centre, Redhill	Urban site allocation/ 1.47ha	Allocated for: • Residential: approximately 20 new homes	Vacant, former adult education Centre. Highly accessible location. Requirement to retain existing trees and enhance landscaping and green infrastructure on site
RED4	Church of Epiphany, Mansfield Drive, Merstham	Urban site allocation/ 0.33ha	Allocated for: • Residential: up to 10 units	Existing use Church (vacant) and curtilage. This site is located in an accessible location with good access to local facilities, including facilities within the nearby local centre. The site provides an opportunity for intensification of an existing previously developed site within the Merstham regeneration area. Measures to address and attenuate surface water flooding risk.
RED8	Reading Arch Road/Bright on Road North	Urban site allocation/ 1.98ha	Allocated for: • Retail: new bulky goods retail provision (approximately 4,000sqm) through extension of the existing retail warehouse area to the south; and • Residential: approximately 150 homes	This site is situated within an accessible location [There are various requirements, but these include:] Measures to manage and mitigate flood risk in order to reduce overall flood risk, including de-culverting of the Redhill Brook where possible and improvements to the river corridor. Design to ensure safe access and egress in the event of flooding. Site specific flood risk assessment to be informed by the Strategic Flood Risk Assessment Level 2. Design of development to explore opportunities to include enhancements to the culvert running through the site in order to incorporate and enhance the green infrastructure opportunities A full contamination survey and land remediation measures as appropriate Design to ensure satisfactory residential amenity due to proximity to railway line and Redhill air quality management area, including appropriate noise reduction measures.
ERM1	Land at Hillsbrow, Redhill	Sustainable urban extension/ Total 9.3ha	Allocated for: • Residential: approximately 100 new homes, including 25 units of retirement accommodation for older people, plus one Traveller pitch	Existing open grassland and woodland. The Hillsbrow site is located on the southern side of the A25 to the east of Redhill town centre. The main site comprises areas of open grassland located on the brow of the Greensand Ridge, surrounded by belts of dense woodland, some of which is protected ancient woodland. The site is a good proximity to Redhill town centre and

				Redhill rail station. There are areas of ancient and other woodland which limit development potential and require protection and there is high visibility of wooded slopes and the paddock to the south of the site within long distance views, particularly from the south. There is scope for development to improve green infrastructure linkages with the surrounding countryside and secure enhanced management of the ancient woodland areas.
ERM2/ ERM3	Land west of Copyhold Works and former Copyhold Works, Redhill	Sustainable urban extension/ Total 17.2ha	Allocated for: • Residential: approximately 210 new homes, including 53 units of retirement accommodation for older people, and one Traveller pitch; and • Education/Community: 1.5ha serviced land to be set aside for a new two-form of entry primary school. If the applicant can demonstrate there is no need for this use at the point of planning application then the land can be used for an additional 40 new homes ; and • Open Space: a new, high quality public open space	Currently an open paddock and derelict former Copyhold works. The former Copyhold works and land to the west is located on the northern side of the A25, directly to the east of Redhill town centre. The west side comprises an open paddock which slopes downwards towards its northern boundary. On the western edge there is an existing public right of way leading into the town. The east side of the site comprises a previously developed former industrial site, comprising a number of derelict buildings and associated areas of hardstanding. The site is largely enveloped by belts of dense woodland. It is believed that parts of the site may have been historically quarried (including the paddock which was subsequently restored). The site adjoins the active Patteson Court landfill, albeit the land which immediately adjoins the site has been filled and restored.
Area 2b Reigate				
REI1	Library and Pool House, Bancroft Road, Reigate	Opportunity site/ 0.22ha	Suggested for: • Retail, commercial, leisure or community: up to 1,000sqm; and • Residential: approximately 25 new homes	Mixed including library and community uses small scale retail/commercial units. In a highly accessible location, adjacent to the proposed primary shopping area of Reigate. Partially within flood zones 2/3.
REI2	Land adjacent to the Town Hall, Castlefield Road, Reigate,	Town centre site/ 0.25ha	Allocated for: • Office only: approximately 1,500sqm; or • Residential only: approximately 30 new homes	Surface car park. The site is situated in an accessible location, on the edge of Reigate town centre, in close proximity to the rail station and on the edge of Reigate town centre. There is a steep topography between site and primary shopping area. The

				site is potentially visible in long range views, particularly from the south. Regionally Important Geological Site and Urban Open Space Designation. 4.7.8 The site, located on a prominent ridge over the town, forms a backdrop and borrowed landscape to Reigate Priory registered park and garden and this backdrop and views from the park would need to be respected in the design of any new development. The site also forms the backdrop to the town and new development must be sensitive to the wider Conservation Area setting and characteristics.
REI3	Albert Road North Industrial Estate, Reigate	Opportunity site/ 2.4ha	Suggested uses: • Employment: At least 7,500sqm of employment space. New development must be within the B1 use class (focussed on small business/incubator space and comprising a mix of offices and small workshops); and • Residential: Up to 50 new homes with a mixture of flats and family houses	Currently mixed employment. The site is partially affected by surface water flood risk, is adjacent to the railway line and has potential land contamination, all of which will need to be taken into consideration, and mitigated as appropriate, in any scheme. Requirement for measures to avoid impact from new development on the Mole Gap to Reigate Escarpment SAC.
SSW2	Land at Sandcross Lane, South Park, Reigate	Sustainable urban extension/ 16.1ha	Allocated for: • Residential: Approximately 260 new homes, including at least 65 units of retirement accommodation for older people, and one Traveller pitch; and • Commercial/retail: Small-scale local commercial facilities, including shops, to complement existing nearby facilities; and • Health: Land set aside for a new health facility, close to existing community facilities; and • Open Space: New high quality public open space in the western part of the site	Open arable fields. The site comprises an open arable field which is actively used for agriculture and is bounded to the west and south by rural roads. King George's playing fields adjoin the western boundary of the site, with further agricultural fields beyond to the south and west. The hedgerows which bound the site on Slipshatch Road, Whitehall Lane and Sandcross Lane are important undesignated historic landscape features and form a group with neighbouring hedgerows, and should be retained as green lane/green corridors and enhanced with suitable landscaped buffers to achieve a 'parkway' principle design. The 'parkway' principle aims to screen development from roads surrounding the site using a wide vegetation buffer to keep the character of the existing country lanes as a transition to, and lessening the urbanisation of, the countryside.

5.68 The majority of these sites are within the urban area designated as either; town centre or urban sites or opportunity sites. In general the potential loss, interruption, or diminution of the ecological value of the routes (flyways) used by the bats from the Mole Gap to Reigate Escarpment SAC to reach their foraging grounds is therefore less likely to have an effect.

5.69 However two of the sites within the urban area RTC4 and RTC5 are larger sites (above 1ha) and both are opportunities for intensification of existing previously developed sites. There is a requirement within the policies to design to retain existing trees and enhance landscaping and green infrastructure on site.

5.70 Additionally RE13 is a 2.4ha opportunity site which is currently used predominately for employment. It is allocated for employment and residential development. It is the closest allocation to Mole Gap to Reigate Escarpment SAC (800 metres). It is however separated by a railway line and it is within an urban core. However due to size and proximity of the site to the SAC there is a specific requirement for measures to avoid impact from new development on the Mole Gap to Reigate Escarpment SAC.

5.71 Allocation sites ERM1, ERM2/3, SSW2 form part of the Sustainable Urban Extension[33] (SUEs). These development sites (largely for housing) are currently within the Green Belt located beyond, but adjacent to the existing urban area. The requirements of SUE's were set out in the adopted Core Strategy policy CS6 – Allocation of land for development. These land parcels have been subject to a planning assessment, including consideration of constraints (such as landscape, nature conservation, flooding, heritage, access, current use, and accessibility), and a review of the extent to which the parcels perform a Green Belt purpose (as defined by national policy). As such allocation sites ERM1, ERM2/3 and SSW2 all have a requirement to retain existing trees and enhance landscaping and green infrastructure on site.

Mitigating Policy

5.72 In relation to planning and development, the core sustenance zone (CSZ) can be used to indicate:

a. The area surrounding the roost within which development work can be assumed to impact the commuting and foraging habitat of bats using the roost, in the absence of information on local foraging behaviour. This will

[33] Further detail available in the Sustainable Urban Extensions (Stage 2) Site Specific Technical Report and the Green Belt Review

highlight the need for species-specific survey techniques where necessary.

b. The area within which mitigation measures should ensure no net reduction in the quality and availability of foraging habitat for the colony, in addition to mitigation measures shown to be necessary following ecological survey work.

5.73 The Core Strategy includes within it measures to avoid or mitigate the impact of new development on Natura 2000 sites, in particular policy CS2, which requires that any proposal for development that is likely to have a significant effect on the Mole Gap to Reigate Escarpment SAC, alone or in combination with other development, will be required to demonstrate that it will not adversely affect the integrity of the SAC. This policy applies to any new development proposal in the DMP when it comes forward for planning permission

5.74 Additionally a modifications to DMP Policy NHE2 - Protecting and enhancing biodiversity and areas of geological importance and Policy NEH3 – Protecting trees, woodland areas and natural habitats is proposed, This will require development proposed within the 3.5km Core Sustenance Zone which will alter the natural landscape (trees and hedgerows) or significantly increase noise or artificial light to provide a bat survey at time of planning application. This is to explicitly mitigate against any impact on the ‘functional linkage’ that Bechstein’s bat populations within the Mole Gap to Reigate Escarpment SAC are reliant on.

5.75 The proposed modification to DMP policies NHE2 and NHE3 are shown in Figure 34. This includes an addition to the explanation for policy modification.

Figure 34 Modifications to DMP polices to accommodate 3.5km CSZ

Policy NHE2 - Protecting and enhancing biodiversity and areas of geological

The following spatial designations are relevant:

- Natura 2000 sites (including the Mole Gap to Reigate Escarpment Special Area of Conservation)
- Sites of Special Scientific Interest
- Sites of Nature Conservation Importance
- Potential Sites of Nature Conservation Importance
- Regionally Important Geological Sites
- Local Nature Reserves
- Biodiversity Opportunity Areas

1) Internationally designated sites, (Natura 2000 sites), including the Mole Gap to Reigate Escarpment Special Area of Conservation (SAC), will be afforded the highest level of protection. Development proposals which are likely to have a significant effect on Natura 2000 sites (either individually or in combination with other development) must be accompanied by an Appropriate Assessment, and will only be permitted where:
   a) It can be demonstrated that they will not have an adverse effect on the integrity of the site, or
   b) it can be demonstrated:
      i. that there are imperative reasons of overriding public interest for permitting the development; and
      ii. there are no satisfactory alternative sites or solutions; and
      iii. any impacts will be suitably mitigated.

   Proposals for improved countryside access which would divert recreational pressure away from the Mole Gap to Reigate Escarpment SAC, particularly those parts which are subject to overuse, will be supported, subject to the wider protection of biodiversity interest features.
   Development proposed within the 3.5km of Mole Gap to Reigate Escarpment SAC which falls within the Bechstein's Bat Core Sustenance Zone will need to be accompanied by a bat survey that identifies any appropriate mitigation measures.

2) Development that is likely to have an adverse effect on the special interest features of a Site of Special Scientific Interest will only be permitted where it is demonstrated that the benefits of the development in that location clearly outweigh the impacts on the special interest feature and on the national network of Sites of Special Scientific Interest, and any impacts will be suitably mitigated.

Policy NHE3 - Protecting trees, woodland areas and natural habitats

The policy applies across the borough; however, the following features and spatial designations are relevant:

- Ancient woodland areas
- Trees, either individually or in groups/areas, protected by Preservation Orders
- Conservation Areas
- Mole Gap to Reigate Escarpment SAC Core Sustenance Zone for Bechstein's Bat

1) Where relevant, new development proposals will be required to include an assessment of existing trees and landscape features, including their suitability for retention. This assessment should include consideration of the impact on habitats beyond the site boundary.
2) Development resulting in the loss of or the deterioration in the quality of a protected tree or hedgerow (including trees covered by protection orders, protected hedgerows, trees in Conservation Areas, Ancient Woodlands, aged and veteran trees outside Ancient Woodland and trees classified as being of categories A or B in value), will be refused unless the need for, and benefits of, development in that location clearly outweigh the loss, on a case by case basis commensurate to the value of the feature.
3) Unprotected but important trees, woodland or hedgerows with ecological, amenity or other value should be retained as an integral part of the design of development except where their long-term survival would be compromised by their age or physical condition or there are overriding benefits.
4) Where loss of features described in 2 and 3 above are permitted, this will be subject to adequate compensatory provision commensurate to that which is lost. This should be provided on site where possible, but off site provision will also be considered in exceptional circumstances.
5) Where replacement tree and hedge planting is required, appropriate species of trees should be used and sufficient space must be provided at the design stage for tree provision, including space to allow trees to reach their optimum size.
6) A buffer zone will be required between ancient woodland sites and the boundary of adjacent new developments. Back gardens will not be considered part of these

Explanation

"3.6.14 The Mole Gap to Reigate Escarpment SAC supports a population of Bechstein's bat (Myotis bechsteinii). Bechstein's bats roosting within the Mole Gap to Reigate Escarpment SAC rely on land outside of the site boundaries. This is in part because they are a highly mobile species. Land which is required to sustain species associated with a Natura 2000 site is referred to as 'functional linkage '. Where impacts to 'functional linkage' could result in significant effects to the bat populations associated with the SAC, full

consideration needs to be undertaken under the Habitats Regulations (in the same way as habitat in the SAC). A 3.5km Core Sustenance Zone (CSZ) is put in place to protect the 'functional linkage' from any development that has potential to impact greenfield sites or existing mature vegetation lines (trees and hedgerows) and/ or river bank corridors and potentially to impact upon the commuting and foraging routes of bats for which these sites are designated. This could include direct loss of habitat and light and sound/ vibration pollution."

Conclusion of Bechstein's Bat Appropriate Assessment – No Likely Significant Effect

5.76 The majority of allocations are smaller previously developed sites in the built up areas and as such development is unlikely to have a significant effect on Bechstein's Bat 'functional linkage'. However allocation sites which are either on larger sites, or form part of the SUE do have habitat suitable for this species. To address this, modifications to DMP policies NHE2, and NHE3 (see Figure 26) have been proposed and there are requirements within these allocation policy sites to maintain or appropriately mitigate against the loss of these commuting routes. Therefore any likely significant effect of that development proposed in the CSZ is mitigated against. As such it can be concluded that the development proposed in the DMP will not have any adverse effect on the integrity of Bechstein's Bats as a qualifying species within Mole Gap to Reigate Escarpment.

6. Conclusions and Next steps

6.1 Following the Appropriate Assessment each of the policies in the DMP have been reassessed (Appendix 10). It can be concluded that even policies that have impact pathways to Natura 2000 with monitoring and modification to policy NEH2 the DMP will not result in any significant or adverse effects on Natura 2000 sites within the scope of this HRA/AA.

6.2 A review of the next Local Plan has begun and will play a part in ensuring that the avoidance measures proposed as a result of the HRA/AA process are effective.

Appendix 1: Development Plans and proposals in and around RBBC

Authority/Area	Plan/project	Summary of proposals	Habitat Regulation Assessment (HRA) and/or Appropriate Assessment (AA) findings (if available)	Change to plan since adoption of Core Strategy?
Tandridge District Council	Core Strategy 2008	Provision for at least 2500 homes between 2006 and 2026	Core Strategy would not pose any significant risk to Mole Gap to Reigate Escarpment SAC or Ashdown Forest SPA/SAC. With measures put in place through the Core Strategy it is unlikely - either alone or in combination - to have a significant impact on these sites	No. Regulation 18 consultation document for revised local plan has been consulted on, but scale/location of development has not been finalised.
	Submission draft Development Management Plan 2018	In progress not yet confirmed	In progress not yet confirmed	
Mole Valley District Council	Core Strategy 2009	Provision for at least 3760 homes between 2006 and 2026 6-7 additional traveller pitches 2800sqm of new convenience retail floorspace	Impact on Mole Gap to Reigate Escarpment SAC from recreational pressure and air pollution will be minimal. With measures put in place through the Core Strategy it is unlikely - either alone or in combination - to have a significant impact on this site	No. Regulation 18 consultation document for revised local plan has been consulted on, but scale/location of development has not been finalised.
	Submission draft Development Management Plan 2018			
Epsom and Ewell Borough Council	Core Strategy 2007	Provision for at least 2715 homes between 2007 and 2022 (Housing requirement out of date)	Core Strategy would not have an impact on Natura 2000 sites due to separation distances from the borough, growth locations, and mitigation/avoidance measures included in the plan.	No. Regulation 18 consultation for revised local plan is ongoing but scale/location of development has not been finalised.
	Submission draft Development Management Plan 2018	Requirement of 7,106 new homes up to 2032 - *418 new homes each year from 2015 to 2032	Site locations not yet confirmed	
Guildford Borough Council	Local Plan 2003	Policy on housing provision no longer being applied; interim housing target of 322.	n/a	No. Revised local plan document has not yet been submitted for examination or adopted.
	Submission draft plan 2018	Provision for 12,426 new homes over plan period (2015/2034) 36,100 to 43,700sqm of office and R&D floorspace, 3.7-4.1ha of industrial floorspace, 41,000sqm of comparison retail	HRA in support of submission draft HRA concludes potential for impacts on the Thames Basin Heaths SPA identified, however subject to the inclusion of mitigation and avoidance measures proposed such as SANG the draft Local Plan would have no likely significant effects on the SPA alone or in combination	

		floorspace 4 gypsy and traveller pitches to and 4 travelling showpeople plots		
Elmbridge Borough Council	Core Strategy 2011	Provision for 3375 homes between 2011 and 2026 11 additional traveller pitches	Potential for adverse impacts on the Thames Basin Heaths SPA from recreation and urbanisation. With measures put in place through the Core Strategy it is unlikely - either alone or in combination - to have a significant impact on this site	No. Regulation 18 consultation document for revised local plan has been consulted on, but scale/location of development has not been finalised.
	Development Management Plan Adopted 2015			
Waverley Borough Council	Local Plan 2002	Housing requirement out of date	n/a	No, although revised local plan is nearing the adoption stage.
	Local Plan Main Modifications 2017	Provision of 11,210 new homes between 2013 and 2032 Traveller target tbc At least 16,000sqm of office/R&D space	HRA/AA in support of submission draft HRA/AA concludes potential for impacts on the Thames Basin Heaths SPA identified, however subject to the inclusion of mitigation and avoidance measures proposed such as SANG the draft Local Plan would have no likely significant effects on the SPA alone or in combination	
London Borough of Sutton	Core Strategy 2009	Provision of at least 5175 homes to 2024	No likely significant effects on European sites identified	No, although revised local plan is nearing the adoption stage.
	Development Management Plan Adopted 2018	Provision of at least 6,405 new homes between 2016 and 2031 At least 10 ha for industrial uses, 23,000sqm office floorspace, 36,000 retail floorspace and 10,000sq gross for leisure uses.	No likely significant effects on European sites identified	
London Borough of Croydon	Local Plan 2013	Provision of at least 20200 homes between 2011 and 2031 10 additional traveller pitches Up to 165000sqm of new employment floorspace	Taking into account the distance of development from the Mole Gap to Reigate Escarpment SAC, Wimbledon Common SAC and Richmond Park SAC, and commitment to establishing a network of alternative open spaces the Plan would not have a likely significant impact on these sites.	No, although revised local plan is nearing the adoption stage.
	Strategic Policies partial review 2016	Provision of up to 32,880 home between 2016 and 2036 Up to 92,000sqm of office floorspace At least 36 traveller pitches	Plan includes sufficient in-built mitigation such that all policies can be screened out from having likely significant effects upon any European designated sites, including the Mole Gap to Reigate Escarpment.	
London Borough of Kingston	Core Strategy 2012 and Town Centre AAP	Provision of 5625 homes between 2012 and 2027.	Core Strategy - Potential for impact on Natura 2000 sites from recreational pressures and air	No

	2008	50000sqm of retail floorspace	pollution, however taking into account the location of most growth and measures to reduce air pollution the Plan is unlikely - either alone or in combination - to have a significant impact on these sites	
Crawley Borough Council	Local Plan 2016	About 5,000 new homes between 2015 and 2030 Up to 10 additional traveller pitches Between 23ha and 35ha of new employment land	No significant impacts identified on European sites, including the Ashdown Forest SAC alone or in combination with other plans or projects	Yes
Horsham District Council	Horsham District Planning Framework 2015	16000 new homes between 2011 and 2031 39 additional traveller pitches New business park at land north of Horsham, university quarter mixed use development and employment site intensification	Taking into account proposed avoidance and mitigation measures the plan will not have an adverse effect on site integrity of any European site, alone or in combination with other plans or projects.	Yes.
Mid Sussex District Council	Local Plan 2004	Housing requirement out of date	n/a	No, although revised local plan is nearing the adoption stage.
	District Plan 2016 (main modifications)	An average of 876 new homes per year until 2023/24. An average of 1,090 new home per year between 2024/5 and 2030/31 subject to no further harm to the integrity of the Ashdown Forest . 23 additional traveller pitches 25ha business park	No adverse impact on Mole Gap to Reigate Escarpment SAC. Adverse effects resulting from atmospheric pollution are not considered likely for the Ashdown Forest SAC. Disturbance impacts are assessed as potentially affecting the Ashdown Forest SPA, however, they are considered to be adequately avoided and mitigated by the District Plan via the implementation of SANG.	
Wealden District Council	Core Strategy 2013	9400 homes between 2006 and 2027 32 additional traveller pitches 40,000sqm employment floorspace	Potential effects identified on Ashdown Forest SAC/SPA, Lewes Downs and Pevensey Levels SAC. Subject to adoption of mitigation measures, recreation and urbanisation effects on the Ashdown Forest, and surface water impacts on the Pevensey Levels could be overcome, in which case the Core Strategy would not alone or in combination have a significant effect on these sites	No
Surrey County Council	Surrey Waste Plan 2008	Identifies potential waste management sties in the borough – Earlswood Depot and Copyhold works	Possible effects identified on Natura 2000 sites from thermal processing emissions, traffic emissions, dust, land take, water discharge, pest and predators and	No. Plan is in the process of being revised but has not reached an advanced stage.

			litter. Concludes that proposed developments were unlikely to result in harmful impact and that the Plan would not have any alone or in-combination effects on European sites	
	Surrey Minerals Plan 2011	Identifies Chilmead Farm as an area of search for silica sand extraction	Potential effect on SW London Waterbodies SPA can be mitigated. No adverse impact on the Mole Gap to Reigate Escarpment identified.	No
	Surrey Aggregates Recycling Joint DPD 2013	Identifies potential for waste management uses at Copyhold works, and aggregates depot at Salfords	The Plan would not give rise to any significant effects on the condition and integrity of Natura 2000 sites	No
	Local Transport Plan 2014	Objective of securing reliable transport network and promoting sustainable transport options	The Plan would not give rise to any significant effects on the condition and integrity of Natura 2000 sites	Yes
Surrey Hills Area of Outstanding Natural Beauty	AONB Management Plan 2014	Includes policies in relation to activities in the AONB, including farming, recreation and tourism, land use planning and traffic and transport	Most plan objectives found to have either a positive or neutral effect on Natura 200 sites or were not applicable. Potential uncertain effects in relation to farming and recreation however these can be reconciled with appropriate management. The Plan would not therefore give rise to significant effects on the identified sites.	Yes

Appendix 2: Assessment of Natura 2000 sites within 15km of RBBC

Grid Reference: TQ199533 JNCC Site Code: UK0012804 Size: 892.3 ha Local Authority: Mole Valley RBBC	**Mole Gap to Reigate Escarpment SAC** **Habitats Regulations Assessment Data Proforma**
Distance from RBBC	within the boundary
Qualifying Features	Annex I (habitats primary reason for selection of this site) 5110 Stable xerothermophilous formations with Buxus sempervirens on rock slopes *(Berberidion p.p.)* 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) (4030 European dry heaths).91J0 Taxus baccata woods of the British Isles * Priority feature Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site 4030 European dry heaths 9130 Asperulo-Fagetum beech forests Annex II species that are a primary reason for selection of this site Not applicable. Annex II species present as a qualifying feature, but not a primary reason for site selection 1166 Great crested newt Triturus cristatus 1323 Bechstein`s bat Myotis bechsteinii
Vulnerabilities	• Nitrogen deposition - exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects • Inappropriate scrub control - Scrub is encroaching onto the chalk grassland. This can quite quickly shade out more delicate and rare plant species found on the chalk slopes, and any associated insect species are also therefore negatively impacted on. • Public Access/Disturbance - effects of high visitor numbers includes; trampling of orchid-rich grasslands, repetitive disturbance to Great crested newt breeding ponds, and spread of disease (such as box blight) • Change in land management - grazing for grasslands and management of woodlands • Disease - Box blight has been recorded on the site and has been shown to be spreading and affecting the SAC feature 'stable box scrub on steep chalk slopes'. This is affected by disturbance.
Conservation Objectives	• Monitor the indicators of increased nitrogen (N) deposition • To maintain a species-rich sward and its associated insects and other invertebrates, chalk grasslands require active management - implement this on parts of the site do not have appropriate active management. • Introduce appropriate landscape scale grazing on the site Secure improvements to Bechstein's bat hibernacula, and habitat connectivity
Conservation Status	Nitrogen sensitive features in favourable condition on the site

Grid Reference: TQ451306 (SAC) TQ450313 (SPA) JNCC Site Code: UK0030080 (SAC) UK9012181 (SPA) Size: 2729 ha (SAC) 3207.08 (SPA) Local Authority: Wealden District	Ashdown Forest SAC/SPA Habitats Regulations Assessment Data Proforma
Distance from RBBC Boundary	12.5km (Approx)
Qualifying Features	SAC/Annex I habitats that are a primary reason for site selection: European dry heaths Northern Atlantic wet heaths with Erica tetralix. (Wet heathland with cross-leaved heath) Annex I habitats present as qualifying feature but not primary reason for site selection: n/a Annex II species that are a primary reason for selection of this site: n/a Annex II species present as qualifying feature but not a primary reason for site selection: Great crested newt Triturus cristatus SPA/Annex I During the breeding season the area regularly supports 1% of the GB breeding population of Nightjar Caprimulgus europaeus; 1.3% of the GB breeding population of Dartford Warbler Sylvia undata. other regularly occurring Annex I species include woodlark *Lullula arborea*, hen harrier *Circus cyaneus* and great grey shrike *Lanius excubitor*
Vulnerabilities	• Air Pollution: Impact of atmospheric nitrogen deposition. Nitrogen deposition exceeds site relevant critical loads. Vegetation is becoming increasingly grass dominated where previously it was heather dominated • Public access/disturbance - There is potential for increased visitor pressure (in particular dogs off leads) to impact on breeding birds, particularly Nightjar which is a ground nesting bird, but also Dartford Warbler as it can nest low in the gorse. • Hydrological changes - The botanical diversity of the wet heath (and valley mire systems and bogs encompassed within it) has declined over the last few decades. Sufficient information/evidence/survey to understand why this is the case. It is also suspected that Rhynchospora alba SAC habitat is present at Ashdown Forest, but the wet heath/bogs have declined in recent years and our current level of survey information/evidence is inadequate. • Change in Land Management - Only one third of the heathland is currently grazed. Favourable condition requires a diverse vegetation structure and grazing, in combination with some mechanical management, can achieve this. The heathland would be improved by more cattle, less sheep and a few ponies

Conservation Objectives	• Control, reduce and ameliorate atmospheric nitrogen impacts Research/establish and implement an advice and education programme for dogwalkers, including leaflets and signage. • Undertake a hydrology/botanical survey of wet heath to enable understanding of botanical decline so that it can be understood how to better manage the wet areas, as well as identify the location of any Rhyncaspora alba habitat • Improve knowledge and stakeholder buy-in for managing required stock levels to maintain heathlands
Conservation Status	Lowland Heath: Unfavourable – recovering

Grid Reference: TQ199728 JNCC Site Code: UK0030246 Size: 846.68ha Local Authority: Richmond Park	Richmond Park SAC Habitats Regulations Assessment Data Proforma
Distance from RBBC Boundary	9.4km (Approx)
Qualifying Features	Annex I habitats that are a primary reason for selection of this site Not applicable Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site Not applicable. Annex II species that are a primary reason for selection of this site 1083 Stag beetle Lucanus cervus Richmond Park has a large number of ancient trees with decaying timber. It is at the heart of the south London centre of distribution for stag beetle Lucanus cervus, and is a site of national importance for the conservation of the fauna of invertebrates associated with the decaying timber of ancient trees. Annex II species present as a qualifying feature, but not a primary reason for site selection - Not applicable.
Vulnerabilities	None identified (in SIP) however invasive species (moth) and habitat fragmentation are cited elsewhere.
Conservation Objectives	Maintain or restore the presence of the stag beetle population across its full range within the SAC, whilst avoiding deterioration from its current level Through the habitat structure/function on and off-site. By ensuring that there is decaying wood and woodland habitat structure. Maintain an abundance and constant supply of ancient trees, standing dead trees, fallen trees, stumps and roots in a state of decay. In urban areas ensure larger native trees and man-made timber structures persist as a larval resource. Maintain a well-structured broadleaved woodland habitat, with sheltered, sunlit glades and rides containing stumps and other suitable decaying wood.
Conservation Status	Not identified

Grid Reference: JNCC Site Code: UK9012171 (SPA) UK11065 (Ramsar) Size: 828.14 (SPA) Local Authority:	South West London Waterbodies SPA/Ramsar Habitats Regulations Assessment Data Proforma
Distance from RBBC Boundary	13.3km (Approx)
Qualifying Features	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species: Over winter; Gadwall Anas strepera, 786 individuals representing at least 2.6% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6) Shoveler Anas clypeata, 1,075 individuals representing at least 2.7% of the wintering Northwestern/Central Europe population (5 year peak mean 1991/2 - 1995/6)
Vulnerabilities	• Public access/disturbance - Most of the sites have some level of formal or informal public access, including water-based activities on some waterbodies (angling, sailing, waterskiing). People can potentially disturb wintering Gadwall and Shoveler, and management for recreational uses may reduce the area of suitable habitat. Research by indicates low numbers of Gadwall and Shoveler are associated with higher levels of disturbance. • Changes in species distributions - reports that Gadwall numbers have been in decline on this SPA (-51% over 10 years up to 2009/10), which is not consistent with upwards national population trend • Invasive species - Large areas of wetland and terrestrial habitat are infested with Crassula helmsii and this is likely to be reducing invertebrate numbers - Gadwall and Shoveler feed on invertebrates. Additionally there are concerns that Egyptian geese are showing significant increases. • Natural changes to site conditions - The inevitable maturation of gravel pits is altering roosting and feeding provision in terms of bankside vegetation, water chemistry and aquatic biodiversity. • Fisheries: Fishing stocking- stocking of fish for recreation angling negatively impacts upon SPA bird populations. Fish de-stocking has been carried out in the past. • Inappropriate weed control - Control or removal of waterweed for watersports potentially impacts upon the availability of food for Gadwall and Shoveler.

Conservation Objectives	• Research recreational users habits and produce information and events to address them on-site and online regarding what is special about the SPA and responsible recreational behaviour. Seek agreement with stakeholders about how each can avoid and manage recreational pressures upon the SPA birds. Introduce new recreation opportunities to attract people away from ecologically sensitive areas, including well managed/constructed through routes. • In partnership with bird recorders/watchers, review existing data and secure fit for-purpose recording practices across the SPA and its surroundings • Manage invasive species; Crassula helmsii and equip recreational users and To manage fishstocks by working with landowners to monitor for the plant, work with anglers and landowners to ensure appropriate stocking levels (levels specific to the particular fish species). • Review the size and location of the area that needs to be clear of weed and also the requirements by gadwall for the particular weeds growing in the sailing area. • Determine the interaction between Egyptian geese and gadwall/shoveller in order to establish whether there are negative direct or indirect impacts upon the SPA birds
Conservation Status	

Grid Reference: TQ560080 JNCC Site Code: UK9012141 Size: 8311ha Local Authorities include: Elmbridge District Council and Guildford District Council	Thames Basin Heath SPA Habitats Regulations Assessment Data Proforma
Distance from RBBC Boundary	11.8km (Approx)
Qualifying Features	The site qualifies under article 4.1 of the Directive (79/409/EEC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season: Caprimulgus europaeus; European nightjar (Breeding) Lullula arborea; Woodlark (Breeding), Sylvia undata; Dartford warbler (Breeding) The geology of the area consists of sand and gravel sediments which give rise to sandy or peaty acidic soils. These support dry heath vegetation in well-draining areas and wet heath vegetation in low-lying shallow slopes and bog. Restrict or reduce the frequency, duration and/or intensity of disturbance affecting nesting, foraging or feeding birds so that the Dartford Warbler feature is not significantly disturbed.
Vulnerabilities	• Air pollution; Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection. • Public Access/Disturbance - Parts of Thames Basin Heaths (and Thursley, Hankley & Frensham Commons SPA) are subject to high levels of recreational use and dog walkers make up a large proportion of visitors. • Hydrological changes - evidence of damaging impacts due to drainage, this is becoming more urgent as changing weather patterns • Inappropriate scrub control - Ineffective or lack of scrub control affects some areas of dry and wet heath, especially at Colony Bog, Bourley and Long Valley. • Invasive species - Rhododendron and Gaultheria control is on-going in parts but difficult to control where access for management is constrained • Undergrazing - Limitations are such that traditional stock cannot be used (because they are live firing ranges),Lack of grazing or other management allowing the encroachment of scrub. • Forestry and woodland management - Large parts of Thames Basin Heaths are occupied by commercial forestry plantations where the maintenance of suitable conditions for Annex 1 birds is dependent upon rotational felling • Wildfire/arson - Uncontrolled fires are very damaging as they can have profound impacts on reptile populations, inverts and plant diversity and can result in significant habitat loss for Annex 1 birds. • Feature location/extent/condition unknown - There are significant gaps in the knowledge of key aspects such as where woodlarks are overwintering and whether these sites are in need of protection, and coverage of the complex in terms of monitoring of Annex 1 birds is not comprehensive so recorded bird numbers are not representative of total numbers.

	• Military - None of the military training areas in the complex currently have integrated management plans which seek to integrate management of the estate for military training with nature conservation management
Conservation Objectives	• Maintain or restore as necessary concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk). • Production of over-arching habitat management strategy to help offset/decrease the effects of recreational disturbance on Annex 1 birds. Implementation of wardening strategy. • Commission hydrological studies • Habitat management (i.e. grazing and modified cultivation practices) should retain the open, mosaic structure of lowland wetland dry heath, ensuring that all life cycle stages of heather are present. Nightjars are known to forage several kilometres away from their nesting territory. This target may also apply to any supporting foraging habitat which is known to occur outside the site boundary. Nightjars are known to forage several kilometres away from their nesting territory. This target may also apply to any supporting foraging habitat which is known to occur outside the site boundary. • Draw up an invasive species control plans for all sites where these remain a problem or pose a significant threat, and agree implementation • Undertake review of long-term forestry management policy in the complex to ensure suitable habitat conditions for Annex 1 birds are consistently maintained • Reduce or restrict predation and disturbance caused by native and non-native predators • Completion of integrated management plans for all military training sites
Conservation Status	NA

Grid Reference: TQ227719 JNCC Site Code: UK0030301 Size: 348.31 Local Authorities: London Boroughs of Wandsworth; Merton; and Richmond on Thames	Wimbledon Common SAC Habitats Regulations Assessment Data Proforma
Distance from RBBC Boundary	9.4km (Approx)
Site Description	Wimbledon Common is one of the largest areas of uncultivated land in the conurbation of London and sits in the Thames Valley Natural Character Area. It supports a mosaic of habitats including broadleaved woodland, acid grassland, dry and wet heath, scrub and mire. The underlying soils are mostly sands, gravels and silty clays which give rise to poorly-drained, nutrient poor and acid conditions. The range of habitats supports a wide diversity of plants and animals, including many which are scarce in the London area. The SAC is a particular stronghold for the stag beetle Lucanus cervus in the south east of England and is at the heart of the local centre of distribution of the species. The site provides ideal habitat conditions for the stag beetle, such as extensive areas of undisturbed woodland and large quantities of decaying wood. The site is also important in supporting small but important areas of heathland, a very scarce habitat in the London area.
Qualifying Features	Annex I habitats that are a primary reason for selection of this site n/a Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site 4010 Northern Atlantic wet heaths with Erica tetralix 4030 European dry heaths Annex II species that are a primary reason for selection of this site 1083 Stag beetle Lucanus cervus Wimbledon Common has a large number of old trees and much fallen decaying timber. It is at the heart of the south London centre of distribution for stag beetle Lucanus cervus, and a relatively large number of records were received from this site during a recent nationwide survey for the species (Percy et al. 2000). The site supports a number of other scarce invertebrate species associated with decaying timber. Annex II species present as a qualifying feature, but not a primary reason for site selection n/a

Vulnerabilities	Air Pollution - Nitrogen deposition exceeds site relevant critical loads. Wimbledon Common is subject to high levels of atmospheric nitrogen oxide and ammonia deposition which is likely to be having deleterious effects on sensitive habitats, particularly the heath and mire vegetation. Public access/disturbance - High visitor use of the site causes damage to sensitive habitats, and results in adverse impacts such as compaction around the base of mature trees and removal of fallen timber. Habitat fragmentation - The Stag beetle remains vulnerable to extinction in the UK as a result of habitat loss and fragmentation of populations Invasive species - Oak processionary moth is now well-established at Richmond Park and other sites in the London area; this species represents a serious threat to human health. Control is potentially damaging to invertebrate populations and is expensive which may result in reduced nature conservation management
Conservation Objectives	For heathlands; restore the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk). Restore the frequency/cover of the identified undesirable species (e.g. Rhododendron ponticum) to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread. At a site, unit and/or catchment level as necessary, maintain or restore the natural hydrological regime to provide the conditions necessary to sustain the Northern Atlantic wet heaths with Erica tetralix feature within the site Restore the abundance of key habitat species at favourable levels (e.g. heather, gorse and bracken) Maintain or restore the presence of the stag beetle population across its full range within the SAC Maintain or restore an abundance and constant supply of ancient trees, standing dead trees, fallen trees, stumps and roots in a state of decay for the stag beetle
Conservation Status	

Appendix 3: Summary of Threats and Pressures for each Natura 2000 site taken from Site Improvement Plans

Priority & Issue	Mole Gap and Reigate Escarpment SAC	Ashdown Forest SAC	Richmond Park SAC	South West London SPA/Ramsar	Thames Basin SPA	Wimbledon Common SAC
Air Pollution: Impact of atmospheric nitrogen deposition	H4030 European dry heaths, H5110 Natural box scrub, H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites), H9130 Beech forests on neutral to rich soils, H91J0 Yew-dominated woodland, S1323 Bechstein`s bat	H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths	NA	NA	A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warbler, H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, H7150 Depressions on peat substrates	H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths
Habitat Fragmentation	NA	NA	NA	NA	A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warbler, H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, H7150 Depressions on peat substrates	S1083 Stag beetle

Undergrazing	NA	NA	NA	NA	A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warbler, H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, H7150 Depressions on peat substrates	NA
Forestry and woodland management	NA	NA	NA	NA	A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warbler, H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths	NA
Inappropriate scrub control	H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites)	NA	NA	NA	A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warbler, H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths	NA
Wildfire/arson	NA	NA	NA	NA	A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warbler, H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, H7150 Depressions on peat substrates	NA

Feature location/ extent/ condition unknown	NA	NA	NA	NA	A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warble	NA
Military	NA	NA	NA	NA	A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warbler, H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, H7150 Depressions on peat substrates	NA
Disease	H5110 Natural box scrub		NA	NA	NA	NA
Change in Land Management	H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites)	H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths	NA	NA	NA	NA
Changes in species distributions	NA	NA	NA	A051(NB) Gadwall, A056(NB) Shoveler	NA	NA
Natural changes to site conditions	NA	NA	NA	A051(NB) Gadwall, A056(NB) Shoveler	NA	NA
Fisheries: Fish stocking	NA	NA	NA	A051(NB) Gadwall, A056(NB) Shoveler	NA	NA
Inappropriate weed control	NA	NA	NA	A051(NB) Gadwall, A056(NB) Shoveler	NA	NA
Hydrological changes	NA	H4010 Wet heathland with cross-leaved heath	NA	NA	H4010 Wet heathland with cross-leaved heath, H7150 Depressions on peat substrates	NA
Invasive Species	NA	NA	NA	A051(NB) Gadwall, A056(NB) Shoveler	H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths	H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, S1083 Stag beetle

Public Access/Disturbance	H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites), S1166 Great crested newt, S1323 Bechstein`s bat	A224(B) European nightjar, A302(B) Dartford Warbler	NA	A051(NB) Gadwall, A056(NB) Shoveler	A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warbler	H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, S1083 Stag beetle

Appendix 4: Screening Assessment of DMP objectives and policies

DMP Objective Approach	DMP Policy Approach	HRA/AAHRA/AA/AA Implications/Impact Pathways (green = screened out, amber = screened in for Appropriate Assessment)
PE1: Safeguard existing employment land and premises to ensure that there is adequate space for businesses to locate in the borough; PE2: Provide flexibility for local businesses to start up, grow, diversify and prosper	EMP1 Principal Employment Areas	Potential Likely Significant Effects A spatial policy which focuses on future industrial and commercial development proposals in existing employment locations (e.g. the redevelopment of existing buildings). Some of these sites are located within the Mole Gap to Reigate Escarpment CRZ. This policy could provide for the following impact pathways linking to: Air Quality from increased traffic emissions and to impact pathway linking to an effect on the Bechstein's bat 'functional linkage' to Mole Gap to Reigate Escarpment SAC
	EMP2: Local Employment Areas:	Potential Likely Significant Effects A spatial policy focuses on future employment generating uses in existing employment locations. Relates to development in existing employment areas. The identified local employment areas are small scale. This policy could provide for the following impact pathways linking to Air Quality from increased traffic emissions impact pathway linking to an effect on the Bechstein's bat 'functional linkage' to Mole Gap to Reigate Escarpment SAC
	EMP3: Employment Development Outside Employment Areas	Spatial policy It focuses on future employment development outside employment areas Relates to new employment development. The policy approach includes criteria to ensure that the type, scale and intensity of development is appropriate to the locality, and allows for the type and level of activity to be limited through conditions. This policy could provide for the following impact pathways linking to: Air Quality from increased traffic emissions
	EMP4: Safeguarding employment land and premises	Potential Likely Significant Effects The policy focuses on protecting existing employment development. The policy may result in change of use some premises from employment to residential. Seeks to safeguard land in employment use but recognises that in some cases this may not be viable. The policy would only be likely to result in a small scale

		increase in residential development over and above that that can be achieved via current permitted development regulations. This policy could provide for the following impact pathway linking to : Air Quality from increased traffic emissions
PE3: Help new development to deliver jobs and skills benefits for local people	EMP5: Local skills and training opportunities	No HRA/AA Implications The policy approach relates to skills provision rather than physical development. It does not provide for any new employment space, location, or type. There are no impact pathways present that link to any of the identified European sites.
PE4: Protect the vitality and viability of our town centre shopping areas PE5: Protect the viability of smaller scale but vital local shopping areas PE6: Ensure that both town and local centres are resilient and able to respond to future changes	RET1: Development within identified retail frontages and local centres	Potential Likely Significant Effects The policy guides the future mix of town centre development within existing town centres. This could result in a small increase in retail floorspace. The nearest town centre to the SAC is Reigate, Development intensification in Reigate town centre will be minimal compared with existing development in and around the town. which is 1.1km from the SAC. This policy could provide for the following impact pathways linking to MGRE SAC: Air Quality from traffic
	RET2: Town centre frontages	No impact pathways/No HRA/AA Implications The policy guides the detailed design of development within existing town centres. There are no impact pathways present that link to any of the identified European sites.
	RET3: Local Centres	Potential Likely Significant Effects The policy guides the future mix of development within local centres. This could result in a small scale increase in residential development in local centres and/or increased use of local centres by residents. This policy could provide for the following impact pathways linking to Air Quality from traffic
	RET4: Development within identified retail frontages and local centres	Potential Likely Significant Effects The policy guides the future use of small local shopping parades and isolated

		shops. This could result in a small scale increase in residential development in these areas. None. The policy relates to small scale development only. Any increase in population from new residential units would be minimal in when compared with existing levels of population. This policy could provide for the following impact pathways linking to Air Quality from traffic
	RET5: Development of town centre uses outside town and local centres	Potential Likely Significant Effects The policy guides the location of retail, leisure and office development outside town centres. This policy could result in new retail, leisure or office development in the existing urban area. The policy focuses these types of development in town centres as a priority, and requires impact assessments to demonstrate that proposals would not have a detrimental impact on town centre. This suggests that any proposals that are permitted would be of a smaller scale and that their impact would be minimal compared to existing levels of development within the urban area This policy could provide for the following impact pathways linking to Air Quality from traffic
	RET6:Retail Warehousing	Potential Likely Significant Effects This policy guides future development in existing retail warehouse areas. It could result in an increase in intensification and thus more trips to these areas. . Relates to development in existing developed retail warehouse areas. Any intensification will be of a relatively small scale compared to background levels of development/traffic generation. The Redhill Retail Warehouse area lies about 2.5km from the Mole Gap to Reigate Escarpment SAC; the Reigate one just over 1km, separated by the railway line, Reigate Hill and areas of residential development. Both areas – given their scale – are unlikely to attract development from the wider sub-region. This policy could provide for the following impact pathways linking to Air Quality from traffic
SC1: To ensure that new development makes	DES1: Design of new development	No impact pathways/No HRA/AAHRA/AA/AA Implications This policy guides the detailed design of development rather than the quantum,

the best use of land whilst also being well designed and protecting and enhancing local character and distinctiveness		type or location of development. There are no impact pathways present that link to any of the identified European sites.
	DES2: Residential garden land development	No impact pathways/No HRA/AA Implications This policy guides the detailed design of development rather than the quantum, type or location of development. There are no impact pathways present that link to any of the identified European sites.
	DES3: Residential Areas of Special Character	No impact pathways/No HRA/AAHRA/AA/AA Implications This policy guides the detailed design of development rather than the quantum, type or location of development. There are no impact pathways present that link to any of the identified European sites.
SC2: To ensure an appropriate mix of housing types and sizes, offering a good standard of living to future occupants	DES4: Housing mix	No impact pathways/No HRA/AA Implications This policy guides the design of new homes and new housing developments rather than the overall quantum or location of residential development. There are no impact pathways present that link to any of the identified European sites.
	DES5: delivering high quality homes	No impact pathways/No HRA/AA Implications This policy guides the design of new homes and new housing developments rather than the overall quantum or location of residential development. There are no impact pathways present that link to any of the identified European sites.
	DES6: Affordable Housing	No impact pathways/No HRA/AA Implications This policy requires that a proportion of homes should be provided as affordable. It does not directly relate to the overall quantum or location of residential development. There are no impact pathways present that link to any of the identified European sites.
	DES7: Specialist Accommodation	No impact pathways/No HRA/AA Implications This policy guides the location of residential caravans and seeks to secure provision of housing for older people and those with support needs. The policy is not spatial and relates to small scale development only, which would have a minimal impact compared to existing levels of development. There are no impact pathways present that link to any of the identified European sites.

SC3: To minimise the impacts of development, and the development process on local residents and local amenity	DES8: Construction management	No impact pathways/No HRA/AA Implications This policy relates to the process of securing permission and undertaking development. It does not directly relate to the overall quantum or location of residential development. There are no impact pathways present that link to any of the identified European sites.
	DES9: Pollution and contaminated land	No impact pathways/No HRA/AA Implications This policy guides the detailed design of development rather than the quantum, type or location of development.
	DES10: Advertisement & shop front design	No impact pathways/No HRA/AA Implications This policy guides the detailed design of development rather than the quantum, type or location of development.
SC4: Protect the most valuable open space within the urban areas SC5: Encourage the provision of open space as part of new developments, and where appropriate new outdoor sport and recreation provision	OSR1: Urban open space	No impact pathways/Positive HRA/AA Implications This policy resists the development of open spaces within the urban area.
	OSR2: Open space in new developments	No impact pathways/No HRA/AA Implications This policy requires the provision of new open space as part of new developments. New open space may provide localised recreation opportunities, potentially reducing recreational pressure on protected sites
	OSR3: Outdoor sport and recreation	Potential Likely Significant Effects This policy may result in the development of outdoor sport and recreation facilities. Development could result in removal of trees and hedgerows. Depending on location of development site there is an impact pathway linking to an effect on the Bechstein's bat 'functional linkage' to Mole Gap to Reigate Escarpment SAC
SC6: Require new developments to provide adequate parking, whilst recognising the need to encourage sustainable transport choices, particularly in the most accessible locations	TAP1: Access, parking and services	No impact pathways/ No HRA/AA Implications This policy guides the detailed design of development rather than the quantum, type or location of development
	TAP2: Airport car parking	No impact pathways/No HRA/AA Implications This policy resists the development of airport car parking

SC7: Ensure new developments are served by safe and well-designed access for vehicles, pedestrians and cyclists		
SC8: Encourage new development to incorporate passive and active energy efficiency measures and climate change resilience measures and renewable energy technologies. SC9: Direct development away from areas at risk of flooding, and ensure all developments are safe from flood risk and do not increase flood risk elsewhere or result in a reduction in water quality	CCF1: Climate Change	No impact pathways/Positive HRA/AA Implications This policy guides the detailed design of development rather than the quantum, type or location of development.
	CCF2: Flood Risk	No impact pathways/No HRA/AA Implications This policy directs development away from areas at risk of flooding. The majority of the borough is not at risk of flooding, so there are many opportunities for development both outside areas of flood risk
SC10: NHE1: Landscape protection NHE2: Protecting and enhancing biodiversity and areas of geological importance NHE3: Protecting trees, woodland areas and natural habitats	NHE1: Landscape Protection	No impact pathways/No HRA/AA Implications The policy offers some support for small scale development in rural areas to support rural communities. May result in small scale rural development, however it will not be of a scale that has an effect on Natura 2000 sites. there are no impact pathways in relation to either air quality or Bechstein's bats' functional linkage land.
	NHE2: Protecting and enhancing biodiversity and areas of geographical importance	No impact pathways/Positive HRA/AA Implications This policy relates to the protection and enhancement of biodiversity. It seeks to protect Natura 2000 sites and supports alternative recreation provision.
	NHE3: Protecting trees, woodland areas and natural habitats	No impact pathways/Positive HRA/AA Implications This policy relates to the protection of trees and woodland areas. It seeks to safeguard trees and woodland (including ancient woodland) and protect hedgerows.
SC11: Maximise the contribution of new development to a comprehensive green infrastructure	NHE4: Green / Blue Infrastructure	No impact pathways/No HRA/AA Implications This policy encourages the provision of green and blue infrastructure. Positive. This policy requires that development proposals should avoid adverse impacts

network across the borough		on existing habitats, and maintain links and corridors, including for biodiversity
SC12: Control development in the Green Belt to safeguard its openness, and where possible enhance its beneficial use	NHE5: Development within the Green Belt	No impact pathways/No HRA/AA Implications This policy offers some support for small scale development / redevelopment in areas of Green Belt. May result in small scale extension to, or reuse of, buildings in the Green Belt, however not likely to be of a scale that has an effect on Natura 2000 sites.
	NHE6: Reuse and adaptation of buildings in the Green Belt and Rural Surrounds of Horley	No impact pathways/No HRA/AA Implications This policy offers some support for the reuse and adaptation of buildings in the countryside. May result in small scale extension to, or reuse of, buildings in the countryside. However the proposed scale and the distance from Natura 2000 sites means that there are no impact pathways in relation to either air quality or Bechstein's bats' functional linkage land.
	NHE7: Rural Surrounds of Horley	No impact pathways/No HRA/AA Implications Spatial policy offers some support for small scale development / redevelopment in areas of countryside around Horley. May result in small scale extension to, or reuse of, buildings in the countryside, around Horley. However the proposed scale and the distance from Natura 2000 sites means that there are no impact pathways in relation to either air quality or Bechstein's bats' functional linkage land.
	NHE8: Horse keeping and equestrian development	No impact pathways/No HRA/AA Implications This policy offers some support for small scale equestrian facilities in rural areas. May result in small scale extension to existing buildings or slight intensification of use.
SC13: Conserve and enhance heritage assets across the borough, supporting their continuing viable use and cultural benefits	NHE9: Heritage Assets	No impact pathways/No HRA/AA Implications Policy relates to minimising the impact of development on heritage assets
PS1: Identify a local target for gypsy, traveller and travelling showpeople sites, and allocate sites to	GTT1: Gypsy, Traveller and Travelling Showpeople Accommodation	This policy identifies sets traveller sites for allocation, the quantum of development and issues that will need to be addressed to make development in these locations acceptable.

achieve this target		See Appendix 5 for individual sites
PS2: Allocate site(s) for cemetery and/or crematorium provision consistent with sustainability principles	CEM1 Cemetery and crematorium provision:	No impact pathways/No HRA/AA Implications None, the policy includes a specific criterion to ensure that applications will only be supported where they would not have an unacceptable impact on biodiversity. This policy provides criteria to guide the assessment of proposals for new cemetery and crematorium development. It could result in the provision of new facilities, most likely to be outside the urban area.
PS3: Allocate sites for development across the borough consistent with the Core Strategy and sustainability principles	Section 3A: Area 1 - the North Downs	Potential Likely Significant Effects Banstead Village Centre site allocation; Urban area site allocation; Opportunity site
	Section 3B: Area 2a - Wealden Greensand Ridge - Redhill and Merstham	Potential Likely Significant Effects Redhill Town Centre site allocations; urban area site allocations; Site allocations beyond the current urban area
	Section 3C: Area 2b - Wealden Greensand Ridge - Reigate	Potential Likely Significant Effects Reigate Town Centre site allocation; Opportunity Sites; Site allocations beyond the current urban area
	Section 3D: Area 3 - The Low Weald	Potential Likely Significant Effects Horley Town Centre site allocations; Urban area site allocations; Opportunity Sites; Site allocations beyond the current urban area; Strategic employment site allocation
PS4: Plan for improvements to existing infrastructure and services, and/or the provision of new infrastructure and services, to meet the needs created by new development	INF1: Infrastructure	Potential Likely Significant Effects This policy seeks to secure infrastructure to support new development.
	INF2: Community facilities	No impact pathways/No HRA/AA Implications This policy relates to the loss or change of use of existing community facilities unless it can be demonstrated that the proposed use would not have an adverse effect on the surround community

	INF3: Electronic Communication Networks	No impact pathways/No HRA/AA Implications This policy relates to the detail s of the requirement for all new development to be connected to high speed and reliable broadband
	MLS1: Phasing of urban extension sites:	No impact pathways/No HRA/AA Implications This policy relates to the timeframes within which urban extension sites would be brought forward rather than specific development proposals.
	MLS2: Safeguarding land for development beyond the plan period	No impact pathways/No HRA/AA Implications – at this stage This policy removes land from the green belt to provide longer term certainty about Green Belt boundaries, it does not relate to specific development proposals. Land within these areas can only be allocated through a subsequent review of the local plan, at which stage HRA/AA will be undertaken.

Appendix 5: Screening of DMP site allocations in relation to public disturbance and Bechstein's bat 'functional linkage'

Policy	Site location/ Allocation type	Allocation Proposal	Distance from Mole Gap to Reigate Escarpment (Approx.)	Impact pathways Public Access/Disturbance	Impact Pathway Bechstein's bat 'functional linkage'
Area 1	The North Downs				
BAN1	136-168 High Street, Banstead /Opportunity site	Suggested uses: The site is suggested for a mixed use scheme, including retail, community and leisure, and residential: • Retail/community/leisure: approximately 1,200sqm (scope for complementary community/leisure uses; including retention or replacement of existing); and • Residential: approximately 40 homes	7.5km	No	No

BAN2	The Horseshoe, Banstead / Banstead Village Centre site allocations	Allocated for: • Comprehensive regeneration of The Horseshoe as an enhanced location for community/public services • A range of community and/or public services, potentially including healthcare, emergency services, library, youth and community facilities • Complementary enabling development including: - Residential: potentially appropriate for all potential development areas, subject to design/mitigation below - Small scale secondary retail, leisure and other commercial on potential development area A within the proposed town centre boundary	7.5km	No	No
BAN3	Banstead Community Centre, Park Road, Banstead /Urban site allocations	Allocated for: Residential: approximately 15 homes; and • Community uses: replacement and enhancement of existing community use	7.5km	No	No
G12	Land at Kents Field, Rectory Lane, Chipstead / Gypsy, Traveller Allocation	Allocated for: Gypsy, Traveller Pitches: Up to 2 pitches	7.5km	No	No
Area 2a	Redhill and Merstham				
RTC2	16-46 Cromwell Road, Redhill/Town centre site allocation	The site is for a mixed use development including enhanced ground floor retail, and residential at	2.4km	Yes	Yes

		upper floors: • Retail, leisure or commercial: no net gain n floorspace; and • Residential: approximately 32 units (net 24). Development requirements and considerations: •Retention of active ground floor uses/frontages (retail/leisure/commercial) Measures to address and attenuate surface water flooding risk			
RTC4	Colebrook, Noke Drive, Redhill /Urban site allocation	Allocated for: • Residential: approximately 110 units; including potentially housing for older people; and • Community: new community uses, potentially including adult social care	2.4km	Yes	Yes
RTC5	Former Longmead Centre, Redhill / Urban site allocation	Allocated for: • Residential: approximately 20 new homes	2.4km	Yes	Yes
RTC6	Gloucester Road Car Park, Redhill /Town Centre site allocation	Allocated for: • Residential and Office: approximately 2,500sqm office space and approximately 30 new homes; or • Residential only: Approximately 60 new homes; or • Offices only: Approximately 4,000 sqm • Parking: Potential for retention or on-site re-provision of some town centre	2.4km	Yes	Yes

		parking capacity.			
RED1	Quarryside Business Park, Thornton Side, Redhill/Urban site allocation	Allocated for: • Residential: up to 60 units, focused predominantly on a mixture of small and large family houses; and • Community: potential for community uses (subject to demand)	2.9km	Yes	Yes
RED2	Bellway House, Station Road, Merstham /Urban site allocation	Allocated for: • Residential: up to 30 units	3.9km	Yes	No
RED4	Church of Epiphany, Mansfield Drive, Merstham/Urban site allocation	Allocated for: • Residential: up to 10 units	3.3km	Yes	Yes
RED5	Merstham Library, Weldon Way, Merstham /Urban site allocation	Allocated for: • Residential: up to 10 homes; and/or • Community: replacement of nearby community use (i.e.RED4) or other relevant community use.	3.7km	Yes	No
RED6	Former Oakley Centre, Merstham /Urban site allocation	Allocated for: • Residential: up to 30 homes (including conversion of listed building).	3.7km	Yes	No
RED8	Reading Arch Road/Brighton Road North /Urban site allocation	Allocated for: • Retail: new bulky goods retail provision (approximately 4,000sqm) through extension of the existing retail warehouse area to the south; and	2.4km	Yes	Yes

		• Residential: approximately 150 homes			
RED9	East Surrey Hospital /Urban site allocation	Allocated for: • Hospital uses • Medical related ancillary uses • Key worker accommodation	3.6km	No	No
ERM1	Land at Hillsbrow, Redhill /Sustainable urban extension	Allocated for: • Residential: approximately 100 new homes, including 25 units of retirement accommodation for older people, plus one Traveller pitch	3.1km	Yes	Yes
ERM2/ ERM3	Land west of Copyhold Works and former Copyhold Works, Redhill /Sustainable urban extension	Allocated for: • Residential: approximately 210 new homes, including 53 units of retirement accommodation for older people, and one Traveller pitch; and • Education/Community: 1.5ha serviced land to be set aside for a new two-form of entry primary school. If the applicant can demonstrate there is no need for this use at the point of planning application then the land can be used for an additional 40 new homes ; and • Open Space: a new, high quality public open space	3.2km	Yes	Yes
ERM4a	164 Bletchingley Road, Merstham /Sustainable urban extension.	Allocated for: • Residential: approximately 30 new homes	4.3km	Yes	No

ERM4b	Land south of Bletchingley Road, Merstham /Sustainable urban extension	Allocated for: • Residential: approximately 20 new homes			
ERM5	Oakley Farm, off Bletchlingley Road, Merstham: /Sustainable urban extension	Allocated for: • Residential: Approximately 95 new homes and one Traveller pitch • Employment: Small business space (offices and workshops) and/or community space, clustered around the existing farm buildings; and • Open Space: New high quality public open space in the eastern part of the site	4.4km	Yes	No
Area 2b	Reigate				
REI1	Library and Pool House, Bancroft Road, Reigate /Opportunity site	Suggested for: • Retail, commercial, leisure or community: up to 1,000sqm; and • Residential: approximately 25 new homes	1.6km	Yes	Yes
REI2	Land adjacent to the Town Hall, Castlefield Road, Reigate,	Allocated for: • Office only: approximately 1,500sqm; or • Residential only: approximately 30	1.3km	Yes	Yes

		new homes			
REI3	Albert Road North Industrial Estate, Reigate /Opportunity sites:	Suggested uses: • Employment: At least 7,500sqm of employment space. New development must be within the B1 use class (focussed on small business/incubator space and comprising a mix of offices and small workshops); and • Residential: Up to 50 new homes with a mixture of flats and family houses	800 metres	Yes	Yes
SSW2	Land at Sandcross Lane, South Park, Reigate /Sustainable urban extension	Allocated for: • Residential: Approximately 260 new homes, including at least 65 units of retirement accommodation for older people, and one Traveller pitch; and • Commercial/retail: Small-scale local commercial facilities, including shops, to complement existing nearby facilities; and • Health: Land set aside for a new health facility, close to existing community facilities; and • Open Space: New high quality public open space in the western part of the site	3km	Yes	Yes

SSW6	Land west of Castle Drive, Reigate /Sustainable urban extension	Allocated for: • Residential: approximately 10 new homes	3.8km	Yes	No
SSW7	Hartswood Nursery, Reigate /Sustainable urban extension	Allocated for • Residential: approximately 25 new homes	3.8km	No	No
SSW9	Land at Dovers Farm, Woodhatch, Reigate	Allocated for: • Residential: approximately 100 new homes, including up to 25 units of retirement accommodation for older people, and one Traveller pitch	3.8km	Yes	No
Area 3	The Low Weald				
G3	Woodlea Stables, Horley/	Allocated for: • Up to 4 pitches	10km	No	No
G4	Treetops/Trentham, Horley	Allocated for: • Up to 2 pitches	10km	No	No
G9(a)	Land south of Fairacres, Axes Lane, Salfords	Allocated for: • Up to 1 plots for travelling showpeople	6.5km	Yes	No
G9(b)	Land south of Fairacres, Axes Lane, Salfords	Allocated for: • Up to 4 plots for travelling showpeople	6.5km	Yes	No

G12	Land at Kents Field, Rectory Lane, Chipstead	Allocated for: • Up to 2 pitches	7.5km	No	No
HOR1	High Street Car Park, Horley /Town centre site allocation:	Allocated for: • Retail/leisure: up to 1,000sqm; and • Residential: approximately 40 new home	9.5km	No	
HOR3	Horley Police Station, 15 Massetts Road, Horley / Town centre site allocation	Allocated for: • Residential: approximately 20 new homes	9.5km	No	No
HOR5	Horley Library, Victoria Road, Horley /Town centre site allocation	Allocated for: • Residential: approximately 35 new homes; and • Community: potential for community uses (e.g. healthcare) subject to demand; and • Parking: retained or replacement parking provision to serve neighbouring community uses	9.5km	No	No
HOR6	50-66 Victoria Road North, Horley /Opportunity site.	Suggested for: • Retail (comparison)/leisure: approximately 1,500sqm (750sqm net); and • Residential: approximately 25 new homes	9.5km	No	No
HOR7	Horley Telephone Exchange, Victoria Road South, Horley /Opportunity site	suggested for: • Residential: approximately 30 new homes; and	9 km	No	No

		• Community: Potential for community uses (e.g. healthcare) or leisure uses subject to demand			
HOR8	Former Chequers Hotel, Bonehurst Road, Horley /Urban site allocation	Allocated for: • Residential: approximately 45 new homes	8.2km	No	NO
HOR9	Horley Strategic Business Park /Strategic Employment Site	Allocated for: • A mix of business space for strategic employment purposes and suitable for a range of occupiers within Class B1 uses • A complementary range of commercial, retail and leisure facilities to serve and facilitate the main business use of the site • At least 5 ha of new high quality public open space, including parkland and outdoor sports facilities	10km	No	
HOR10	59-61 Brighton Road, Horley /Urban site allocation	Allocated for: • Residential: up to 20 homes	7km	N0	No
NWH1	Land at Meath Green Lane, Horley /Sustainable urban extension	Allocated for: • Residential: approximately 75 new homes, and one Traveller pitch; and • Open Space: new public open space along	7km	Yes	No

		the river corridor to link up the Riverside Green Chain			
NWH2	Land at Bonehurst Road, Horley /Sustainable urban extension	Allocated for: • Residential: approximately 40 new homes; and • Open Space: new public open space along the river corridor to link up the Riverside Green Chain	7.6km	No	No
SEH4	Land off The Close and Haroldsea Drive, Horley /Sustainable urban extension	Allocated for: • Residential: approximately 40 new homes	10.2km	No	No

Appendix 6 Screening assessment of DMP policies on each Natura 2000 site within realms of HRA/AA (*Likely Significant Effects)

Mole Gap to Reigate Escarpment SAC					
Potential Impacts of the Plan	**Environmental Pathways**	**Is the site sensitive/vulnerable to these impacts?**	**Risk**	***LSE alone/ Combination?**	**Appropriate Assessment (Stage 2) required?**
Air Pollution: Impact of atmospheric nitrogen deposition Policies Policies: Policies EMP1; EMP2; EMP3; RET1; RET3; RET4; RET5; RET6; INF1 All allocation sites	Proposed development has the potential to increase traffic particularly along the A217 Reigate Hill, B2032 Pebble Hill and M25 Junction 8 to 9. This could reduce air quality in these areas.	Yes - H4030 European dry heaths, H5110 Natural box scrub, H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites), H9130 Beech forests on neutral to rich soils, H91J0 Yew-dominated woodland, S1323 Bechstein`s bat, are sensitive to the impacts of atmospheric pollution	Yes	Yes	Yes – Projected transport/air quality modelling
Public Access/Disturbance	Pressure from public access from informal recreation (i.e. walking/dog walking). Litter and trampling are specific threats.	Yes - H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites vulnerable to trampling S1166 Great crested newt, S1323 Bechstein`s bat are species sensitive to habitat disturbance	Yes	No	No
Mobile species requiring ‘Functional Linkage’ e.g. Bechstein’s bat Policies EMP1;EMP2; RET6; OSR3 Allocation sites in Section 3c Area 2b Section 3B Area2a	Loss of trees and hedgerows within 3.5km outside of the SAC which provide foraging and habitat connectivity to Bechstein's bat hibernacula inside the SAC	Yes	Yes	Yes	Yes – assessment of mitigation
Hydrological changes	Part of the Thames Basin Management Area in the Mole River Catchment – the quality of waterways varies but is currently under improvement work programme	No	No	No	No

Ashdown SPA/SAC					
Potential Impacts of the Plan	**Environmental Pathways**	**Is the site sensitive/vulnerable to these impacts?**	**Risk**	**LSE alone/ In-combination?**	**Appropriate Assessment (Stage 2) required?**
Air Pollution: Impact of atmospheric nitrogen deposition	Proposed development is not close enough distance and will not significantly increase traffic along the key routes running in the SAC.	Yes - H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths	No	No	No
Public Access/Disturbance	Increase pressure from recreation particularly dog walkers. The SPA/SAC is over 12km from the Plan area. It is therefore unlikely that there will be a significant increase in recreational activity as a result of proposed development.	Yes A224(B) European nightjar, A302(B) Dartford Warbler	No	No	No
Hydrological changes	Botanical diversity of the wet heath (and valley mire systems and bogs encompassed within it) have	Yes H4010 Wet heathland with cross-leaved heath	No	No	No

	declined. However due to the nature of the threat and pressure and distance from proposed development there are no impact pathways				

South West London SPA/Ramsar					
Potential Impacts of the Plan	**Environmental Pathways**	**Is the site sensitive/vulnerable to these impacts?**	**Risk**	**LSE alone/ In-combination?**	**Appropriate Assessment (Stage 2) required?**
Air Pollution: Impact of atmospheric nitrogen deposition Policy identified location	Proposed development will not significantly increase traffic along the key routes running into the SAC.	Yes - H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths	No	No	No
Public Access/Disturbance	There is recreational pressure especially in relation to water-based activities; fishing, water-sports. However it is located over 13km away and it is therefore unlikely that there will be a significant increase in recreational activity as a result of proposed development.	Yes - A051(NB) Gadwall, A056(NB) Shoveler	Yes	No	No
Hydrological changes	Although hydrological changes are not cited specifically as a threat and pressure this SPA/Ramsar is impacted by waterborne/dependent invasive species Crassula helmsi and Egyptian geese. However due to the nature of the threat and pressure and distance from proposed development there are no impact pathways for LSEs	Yes Indirectly – A051(NB) Gadwall, A056(NB) Shoveler	No	No	No

Thames Basin Heaths SPA					
Potential Impacts of the Plan	Environmental Pathways	Is the site sensitive/vulnerable to these impacts?	Risk	LSE alone/ In-combination?	Appropriate Assessment (Stage 2) required?
Air Pollution: Impact of atmospheric nitrogen deposition Policies EMP1; EMP2; EMP3; RET1; RET3; RET4; RET5; RET6; INF1 All allocation sites	Proposed development has the potential to increase traffic particularly along the M25 east and west of junction 10, and the A3 leading off from this junction. This could reduce air quality in these areas due to emission's.	Yes - A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warbler, H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, H7150 Depressions on peat substrates	Yes	Yes	Yes – Projected transport/air quality modelling
Public Access/Disturbance	Increase pressure from recreation particularly dog walkers. The SPA/SAC is over 11km from the Plan area. It is therefore unlikely that there will be a significant increase in recreational activity as a result of proposed development.	Yes - A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford Warbler, H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, H7150 Depressions on peat substrates	No	No	No
Hydrological changes	Changes related to the drainage of Thames Basin complex not to Thames Heath Basin SPA specifically. Due to the distance and nature of threat/pressure there are no known pathways.	Yes - H4010 Wet heathland with cross-leaved heath, H7150 Depressions on peat substrates	No	No	No

Wimbledon Common SAC					
Potential Impacts of the Plan	Environmental Pathways	Is the site sensitive/vulnerable to these impacts?	Risk	LSE alone/ In-combination?	Appropriate Assessment (Stage 2) required?
Air Pollution: Impact of atmospheric nitrogen deposition Policies EMP1; EMP2; EMP3; RET1; RET3; RET4; RET5; RET6; INF1 All allocation sites	Proposed development has the potential to increase traffic particularly along the A3 and a small potential on A219. This could reduce air quality in these areas.	Yes - H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths	Yes	Yes	Yes – Projected transport/air quality modelling
Public Access/Disturbance	Increase pressure as in an urban setting. The SAC is over 9km from the Plan area. It is therefore unlikely that there will be a significant increase in recreational activity as a result of proposed development. No impact pathway	Yes - H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, S1083 Stag beetle	Yes	No	No
Hydrological changes	No identified pathways		No	No	No

Appendix 7 SSSI Unit Details

Mole Gap to Reigate Escarpment SAC

Mole Gap to Reigate Escarpment SSSI - COLLEY HILL (023)

Staff member responsible: GEORGINA TERRY

Unit Id: 1008886

Unit area (ha): 39.9631

Unit Status: Live Gridref: TQ 245 520

Main habitat: CALCAREOUS GRASSLAND - Lowland

Condition (click for history): Unfavourable - Recovering Assessed by: HOBBS, (RALPH)

Last assessed: 15/09/2008 Last field visit: 15/09/2008

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 15/09/2008

Condition assessment comment: Large areas of Chalk grassland on quite steep slopes some areas of trees and scattered scrub create a good mosaic of habitats. Well used by the public. Cattle used to graze the more accessible areas although the best chalk grassland is on the steeper slopes where the soils are thinnest, rabbit grazing evident.

Birdsfoot trefoil and Salad burnett abundant (8 of 10)

Rough hawkbit (4 of 10) Dwarf thistle (3 of 10)

Autumn gentians (2 0f 10)

Squinancywort, Mouse-ear hawkweed, Devils bit scabious and Thyme (1 of 10)

Also Eyebright, Yellow-wort, Harebell, Common centaury, Black knapweed, Marjoram and Wild basil.

Number of adverse condition reasons: 0

Mole Gap to Reigate Escarpment SSSI - REIGATE HILL - NT (025)

Staff member responsible: GEORGINA TERRY

Unit Id: 1008870

Unit area (ha): 20.0165

Unit Status: Live Gridref: TQ 255 519

Main habitat: BROADLEAVED, MIXED AND YEW WOODLAND - Lowland

Condition (click for history): Unfavourable - Recovering Assessed by: HOBBS, (RALPH)

Last assessed: 15/09/2008 Last field visit: 15/09/2008

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 15/09/2008

Condition assessment comment: Yew, Ash and Beech dominated woodland with Oak and Birch with Hazel, Hawthorn, Dog rose, Privet and Holly understory.

Ground flora is Bramble, Ivy, Dogs mercury, Wild strawberry, Early dog-violet and chalk grassland species in the open glades and adjacent to tracks.

Some Horse Chestnut, laurel and Sycamore adjacent to houses.

Areas of secondary woodland probably resulting from the 1987 Storm are being colonised with Sycamore and Buddlea although there are signs that this has/is being controlled.

Has good and varied structure and plenty of standing and fallen deadwood, reasonable regeneration of key species but some attention needs to be paid to undesirables colonising the clearings and glades.

Number of adverse condition reasons: 0

Mole Gap to Reigate Escarpment SSSI - DAWCOMBE WOOD (035)

Staff member responsible: GEORGINA TERRY

Unit Id: 1025519

Unit area (ha): 10.5264

Unit Status: Live Gridref: TQ 215 526

Main habitat: BROADLEAVED, MIXED AND YEW WOODLAND - Lowland

Condition (click for history): Favourable Assessed by: HOBBS, (RALPH)

Last assessed: 15/09/2008 Last field visit: 15/09/2008

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 15/09/2008

Condition assessment comment: Area of mature woodland on very steep slopes, non intervention.

Contains Ash, Yew, Whitebeam, Beech and suckering Elm. Shrub layer includes Hazel, Blackthorn Hawthorn and Field Maple.

The transition to adjacent grassland is a very convoluted boundary deliberately managed to create sheltered glades and benefit dormouse.

There are no rides as such but the edge provides plenty of transition habitat, there is plenty of fallen and standing deadwood.

Number of adverse condition reasons: 0

Mole Gap to Reigate Escarpment SSSI - DAWCOMBE (036)

Staff member responsible: GEORGINA TERRY

Unit Id: 1023381

Unit area (ha): 8.0461

Unit Status: Live Gridref: TQ 214 524

Main habitat: CALCAREOUS GRASSLAND - Lowland

Condition (click for history): Unfavourable - Recovering Assessed by: HOBBS, (RALPH)

Last assessed: 15/09/2008 Last field visit: 15/09/2008

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 15/09/2008

Condition assessment comment: Grassland adjacent to woodland with areas of scattered scrub and a boundary of trees against the road.

Site is only grazed by rabbits and the local wildlife trust have been very active in keeping scrub down to acceptable levels by hand, grazing is planned.

Salad Burnett dominant (10 of 10) Thyme abundant (8 of 10)

Squinancywort, Dwarf thistle and common rockrose frequent (6 of 10).

Birds foot trefoil and Mouse-ear Hawkweed occasional (4 of 10)

Cowslip, Rough Hawkbit and Small scabious rare (2 of 10)

Also present on the site are a variety of Orchid species and Twayblades, Autumn Gentian, Carline thistle and Burnett saxifrage.

Regenerating scrub is present throughout the grassland areas with Torgrass in 3 small patches, but grazing, when introduced, is expected to get this under control.

Number of adverse condition reasons: 0

Thames Basin Heath SPA

Ockham and Wisley Commons SSSI - CHATLEY HEATH (010)

Staff member responsible: GRAHAM STEVEN

Unit Id: 1017134

Unit area (ha): 23.484

Unit Status: Live Gridref: TQ 086 586

Main habitat: DWARF SHRUB HEATH - Lowland

Condition (click for history): Favourable Assessed by: MORTIMER, (CAROLE)

Last assessed: 21/09/2011 Last field visit: 21/09/2011

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 21/09/2011

Condition assessment comment: The heather in this unit is mainly building/mature stage but there is some pioneer stage where narrow strips have been cut. The large amount of small birch trees will be reduced during winter 2011/2012 under a new capital works plan. There are mature trees around the boundary of site and on the hill around the semaphore tower where they include mature sweet chestnut, oak and pine. All the rhododendron has been cut down or grubbed out in the area north of the tower, with little regrowth visible, and work is ongoing to remove it to the south. Common Cat's-ear and Sheep's Sorrel are abundant in small areas and there is a little dwarf gorse. The work which has been undertaken under the HLS agreement results in the Unit moving from unfavourable recovering to favourable condition.

Number of adverse condition reasons: 0

Ockham and Wisley Commons SSSI - WISLEY COMMON (E) (003)

Staff member responsible: GRAHAM STEVEN

Unit Id: 1008847

Unit area (ha): 48.3094

Unit Status: Live Gridref: TQ 075 589

Main habitat: DWARF SHRUB HEATH - Lowland

Condition (click for history): Unfavourable - Recovering Assessed by: MORTIMER, (CAROLE)

Last assessed: 12/09/2011 Last field visit: 12/09/2011

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 12/09/2011

Condition assessment comment: Unit is moving towards favourable condition - large scale tree clearance carried out with some stump grinding. This has led to a resurgence of birch scrub and bracken and management to deal with this is a priority. Further grazing, pulling of scrub and bracken spraying needed and funded. Also firebreak network should be improved especially in recently cleared areas. Heather regeneration is good, with high levels of pioneer heath but still not enough building heather to achieve favourable condition. Historic environment feature - tumulus has a good covering of bell heather, scrub and bracken management needed to be maintained here too.

Number of adverse condition reasons: 0

Ockham and Wisley Commons SSSI - WISLEY COMMON (W) (005)

Staff member responsible: GRAHAM STEVEN

Unit Id: 1008848

Unit area (ha): 62.3627

Unit Status: Live Gridref: TQ 069 587

Main habitat: DWARF SHRUB HEATH - Lowland

Condition (click for history): Favourable Assessed by: MORTIMER, (CAROLE)

Last assessed: 06/09/2011 Last field visit: 06/09/2011

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 06/09/2011

Condition assessment comment: This unit is meeting all the dry heathland targets for age structure and scrub, forbs, grasses and negative indicator species. Summer grazing is having a beneficial effect, creating new niches.

The wet heathland is also meeting all targets except for sphagnum which is at 5% rather than 10% cover, this is acceptable and should be changed in the conservation objectives as there are mire communities nearby which have much denser levels of sphagnum.

HLS requirements have been fulfilled, bracken spraying carried out.

Number of adverse condition reasons: 0

Ockham and Wisley Commons SSSI - BOLDER MERE (007)

Staff member responsible: GRAHAM STEVEN

Unit Id: 1008849

Unit area (ha): 23.2016

Unit Status: Live Gridref: TQ 076 582

Main habitat: DWARF SHRUB HEATH - Lowland

Condition (click for history): Unfavourable - Recovering Assessed by: MORTIMER, (CAROLE)

Last assessed: 29/09/2011 Last field visit: 29/09/2011

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 29/09/2011

Condition assessment comment: Some areas of mature trees have been cleared but they still dominate on this unit, especially pine and sweet chestnut. There is also oak, birch, beech and, near the lake, hornbeam with alder and willow carr. A wet flush to the east of the lake supports Erica tetralix, Molinia, juncus spp and sphagnum spp. Wet flushes to the south of the lake support the same species, with the exception of Erica tetralix. Most of the rhododendron has been removed, creating open areas, but heather is not establishing. Further thinning of the pine would be beneficial together with raking of litter layer to expose mineral soil. Rhododendron regrowth to the south east of the lake needs to be kept under control.

Number of adverse condition reasons: 0

Ockham and Wisley Commons SSSI - BOLDER MERE LAKE (008)

Staff member responsible: GRAHAM STEVEN

Unit Id: 1008844

Unit area (ha): 6.3755

Unit Status: Live Gridref: TQ 076 583

Main habitat: STANDING OPEN WATER AND CANALS

Condition (click for history): Favourable Assessed by: STEVEN, (GRAHAM)

Last assessed: 10/03/2016 Last field visit: 22/02/2016

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 10/03/2016

Condition assessment comment:

One of the features of special nature conservation interest at Ockham and Wisley Commons is the breeding odonata assemblage. This is associated with various water bodies, mires, pools and runnels in the heath, including the large lake known as Boldermere. The aim is to maintain a wide diversity of species, especially the less common species which are dependent upon small water bodies in heathland and mires. This means that it is important that a range of wetland habitat niches should be present across the site and that suitable terrestrial habitat conditions are maintained to support healthy populations. Data provided by local volunteer recorders provides evidence that at least 10 dragonfly species are breeding on site and 9 damselfly species. This represents a diverse assemblage and includes two scarce species strongly associated with heathland. Habitat conditions for breeding odonata are generally good across the site. The condition of Boldermere appears to have improved following work to remove carp from the lake. Water clarity is good and there are no indications of raised nutrient levels or other pollution. This will have benefits for aquatic vegetation and aquatic invertebrate diversity. The marginal vegetation around the lake has good structure for odonata. There are areas of tall fen, wet woodland and of particular value, an extensive area of mire vegetation on the southern margin. Habitat conditions in the small mire west of Pond Farm are suitable for a number of the more generalist odonata species but other, more acidic ponds support specialist species of acid mires and runnels. Two of the small ponds are dominated by the non-native Crassula helmsii but conditions remain suitable for wetland invertebrates. The shallow pond close to the farm is in good condition with aquatic plants characteristic of nutrient-poor, acidic water bodies including Juncus bulbosus. There are no indications of issues related to water quality or pollution in any of the water bodies.

Number of adverse condition reasons: 3

Ockham and Wisley Commons SSSI - OCKHAM COMMON (009)

Staff member responsible: GRAHAM STEVEN

Unit Id: 1008850

Unit area (ha): 55.3034

Unit Status: Live Gridref: TQ 082 585

Main habitat: DWARF SHRUB HEATH - Lowland

Condition (click for history): Unfavourable - Recovering Assessed by: MORTIMER, (CAROLE)

Last assessed: 23/06/2011 Last field visit: 23/06/2011

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 23/06/2011

Condition assessment comment: The area of heathland is increasing in this unit due to forestry clearance and some heather regeneration seen, this needs to be supported

with scrub clearance/treatment. Recommended management includes pine/birch pulling/weed wiping and grazing in enclosures under the provisions of the Commons Act 2006. Some good areas of mature heather in this unit and also good levels of bare ground. The area could be suitable for silver studded blue re-introduction once pioneer heath established.

Number of adverse condition reasons: 0

Wimbledon Common SAC

Wimbledon Common SSSI - PUTNEY HEATH - WANDSWORTH (001)

Staff member responsible: LOUISE CROTHALL

Unit Id: 1005145

Unit area (ha): 64.2291

Unit Status: Live Gridref: TQ 232 729

Main habitat: DWARF SHRUB HEATH - Lowland

Condition (click for history): Unfavourable - Recovering Assessed by: VINCENT, (PAUL)

Last assessed: 18/07/2013 Last field visit: 18/07/2013

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 18/07/2013

Condition assessment comment: This is an extensive area with a mosaic of heathland set amongst long-established secondary woodland. Most of the heath is best described as humid heath as it does not appear to be permanently wet.

There are areas which are in good condition but most of the heath fails to meet key targets.

There is no evidence of loss of habitat extent, indeed there has been recent tree and scrub clearance in parts of the unit to promote expansion of heath.

Key concerns are low structural and age diversity in the heath vegetation, low cover of bare ground and gaps in the vegetation.

The dominant heath species is heather with only very small amounts of cross-leaved heath.

The heather is generally in the building/mature growth phase with little in the pioneer stage, and conditions to promote establishment of new generations of heather are currently poor.

Habitat structure for invertebrates of tall vegetation and scrub edge is good but there are generally few gaps in the vegetation or areas of bare ground suitable for invertebrates of short turf and sandy soils.

The frequency of characteristic associated plants is generally lower than desirable although tormentil, catsear, heath rush, common sedge, mat grass, heath grass and creeping willow are locally frequent. These are all scarce plants in London.

Molinia is abundant but overall cover is within target (<60%). Cover of bracken is generally low and is well within target overall.

Cover of scrub is generally within target but cover exceeds target in a few places (up to 40%).

Cover of common gorse is within target.

There are no indications of significant damaging impacts arising from non-native species, drainage, trampling, burning or disturbance.

Measures to increase structural and age diversity in the heather, increase the amount of bare ground and gaps, and reduce scrub cover would bring the unit into favourable condition.

Number of adverse condition reasons: 2

Wimbledon Common SSSI - WOODLAND WANDSWORTH (006)

Staff member responsible: LOUISE CROTHALL

Unit Id: 1024194

Unit area (ha): 44.8322

Unit Status: Live Gridref: TQ 225 725

Main habitat: BROADLEAVED, MIXED AND YEW WOODLAND - Lowland

Condition (click for history): Unfavourable - Recovering Assessed by: VINCENT, (PAUL)

Last assessed: 30/01/2014 Last field visit: 30/01/2014

ISA Survey: View Surveys

Date of site check: Last CSM assessment: 30/01/2014

Condition assessment comment: This unit contains a small area of acid grassland mainly on areas of rough on golf course. The grassland fails on high proportion of bare ground(25%) cover of litter (30%), cover of negative indicator species (10%) and just fails on the cover of trees and shrubs (5%- target <5%). Only one species recorded in sward as occasional. All other targets passed. The sward appears to be suffering from

its use as a golf course-this could be through high footfall but also possibly through rolling and fertiliser spread- and management or use of the areas of acid grassland really needs to become less intensive to improve the condition. The Woodland area within this unit was assessed against the appropriate habitat conditions for the Stag Beetle. Generally there was a good variation of tree age class across the woodland area but very few veteran or mature trees. There was a good range of decaying wood but some areas lacked large trunks or dead limbs (Mainly due to the lack of mature trees). The decaying wood was located in a variety of different conditions both warm and wet. Sycamore and Holly management is required; this should be addressed in the current EWGS. Where management/ removal takes place stumps should be treated in order to prevent Sycamore and Holly regeneration. In areas of heavy recreational use soil compaction is preventing regeneration. Woodland management should focus on Holly and Sycamore removal, identification and management of mature/veterans of the future and management of decaying wood habitat.

Number of adverse condition reasons: 0

Appendix 8 APIS data for affected sites (200 m principle)

APIS guidance recommends looking at site relevant critical loads in terms of assessing impacts on SACs: “The ‘Site Relevant Critical Loads’ tool provides critical loads for acidity and nitrogen for designated features within every SAC, SPA or SSSI in the UK”[34]

APIS also provides information in relation to Nitrogen Oxides levels, as well as other pollutants.

However, it should be noted that all data provided on APIS is ‘broad brush’ in that the data resolution is only to 1km (for NOx) and 5km (for nitrogen deposition). As such, it can be argued that, following the 200 m principle, a location-specific search, in particular in relation to a SAC such as Mole Gap to Reigate Escarpment SAC which is in part dispersed and consists of a number of SSSIs sites, gives a more accurate picture. For completeness both sets of data are included in this appendix.

All data in this appendix is from the APIS website and as of September 2018.

[34] ttp://www.apis.ac.uk/srcl

1. Site relevant critical load information

Mole Gap and Reigate Escarpment SAC

Concentrations and Depositions

European dry heaths (H4030)

− European dry heaths

Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen | Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Dwarf shrub heath				
Maximum: 17.36 Minimum: 15.4 Average: 15.61	Maximum: 1.24 | 0.2 Minimum: 1.1 | 0.19 Average: 1.12 | 0.2	Maximum: 1.58 Minimum: 1.16 Average: 1.2	Maximum: 26.61 Minimum: 14.93 Average: 16.95	Maximum: 0.29 Minimum: 0.21 Average: 0.24

Natural box scrub (H5110)

− Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion pp)

Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen | Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Broadleaved, mixed and yew woodland				
Maximum: 28.56 Minimum: 23.94 Average: 24.48	Maximum: 2.04 | 0.24 Minimum: 1.71 | 0.23 Average: 1.75 | 0.23	Maximum: 1.58 Minimum: 1.16 Average: 1.2	Maximum: 26.61 Minimum: 14.93 Average: 16.95	Maximum: 0.29 Minimum: 0.21 Average: 0.24

Dry grasslands and scrublands on chalk or limestone (important orchid sites) (H6210)

− Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)

Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen | Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Calcareous grassland				
Maximum: 17.36 Minimum: 15.4 Average: 15.61	Maximum: 1.24 | 0.2 Minimum: 1.1 | 0.19 Average: 1.12 | 0.2	Maximum: 1.58 Minimum: 1.16 Average: 1.2	Maximum: 26.61 Minimum: 14.93 Average: 16.95	Maximum: 0.29 Minimum: 0.21 Average: 0.24

Beech forests on neutral to rich soils (H9130)

− Asperulo-Fagetum beech forests

Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen | Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Broadleaved, mixed and yew woodland				
Maximum: 28.56 Minimum: 23.94 Average: 24.48	Maximum: 2.04 | 0.24 Minimum: 1.71 | 0.23 Average: 1.75 | 0.23	Maximum: 1.58 Minimum: 1.16 Average: 1.2	Maximum: 26.61 Minimum: 14.93 Average: 16.95	Maximum: 0.29 Minimum: 0.21 Average: 0.24

Yew-dominated woodland (H91J0)

− Taxus baccata woods of the British Isles

Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen | Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Broadleaved, mixed and yew woodland				
Maximum: 28.56 Minimum: 23.94 Average: 24.48	Maximum: 2.04 | 0.24 Minimum: 1.71 | 0.23 Average: 1.75 | 0.23	Maximum: 1.58 Minimum: 1.16 Average: 1.2	Maximum: 26.61 Minimum: 14.93 Average: 16.95	Maximum: 0.29 Minimum: 0.21 Average: 0.24

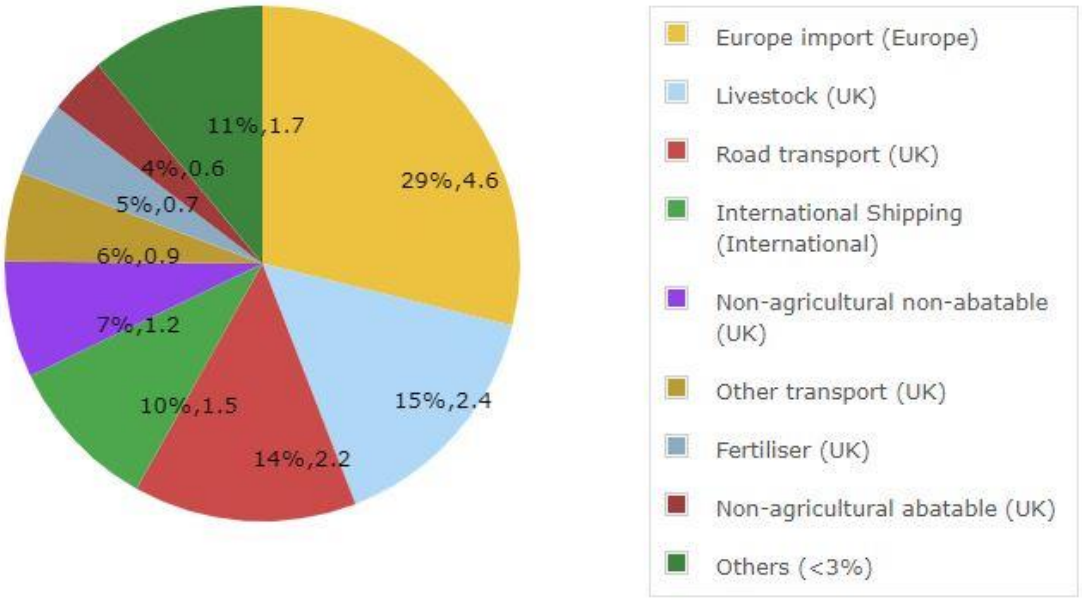
Bechstein`s bat (S1323)

− Myotis bechsteini - Bechstein`s bat

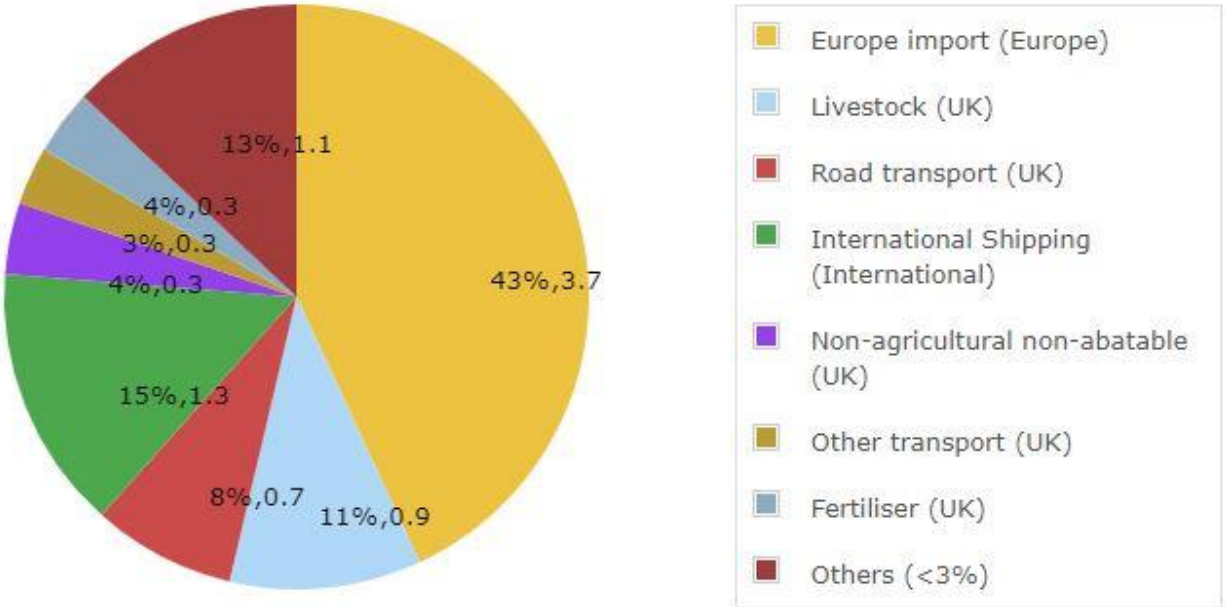
Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen | Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Broadleaved, mixed and yew woodland				
Maximum: 28.56 Minimum: 23.94 Average: 24.48	Maximum: 2.04 | 0.24 Minimum: 1.71 | 0.23 Average: 1.75 | 0.23	Maximum: 1.58 Minimum: 1.16 Average: 1.2	Maximum: 26.61 Minimum: 14.93 Average: 16.95	Maximum: 0.29 Minimum: 0.21 Average: 0.24

Source attribution

Pie Chart: Sources ranked by total Nitrogen deposition (Kg N/ha/yr)



Pie Chart: Long range contribution to Nitrogen deposition (Kg N/ha/yr) from sources (UK)

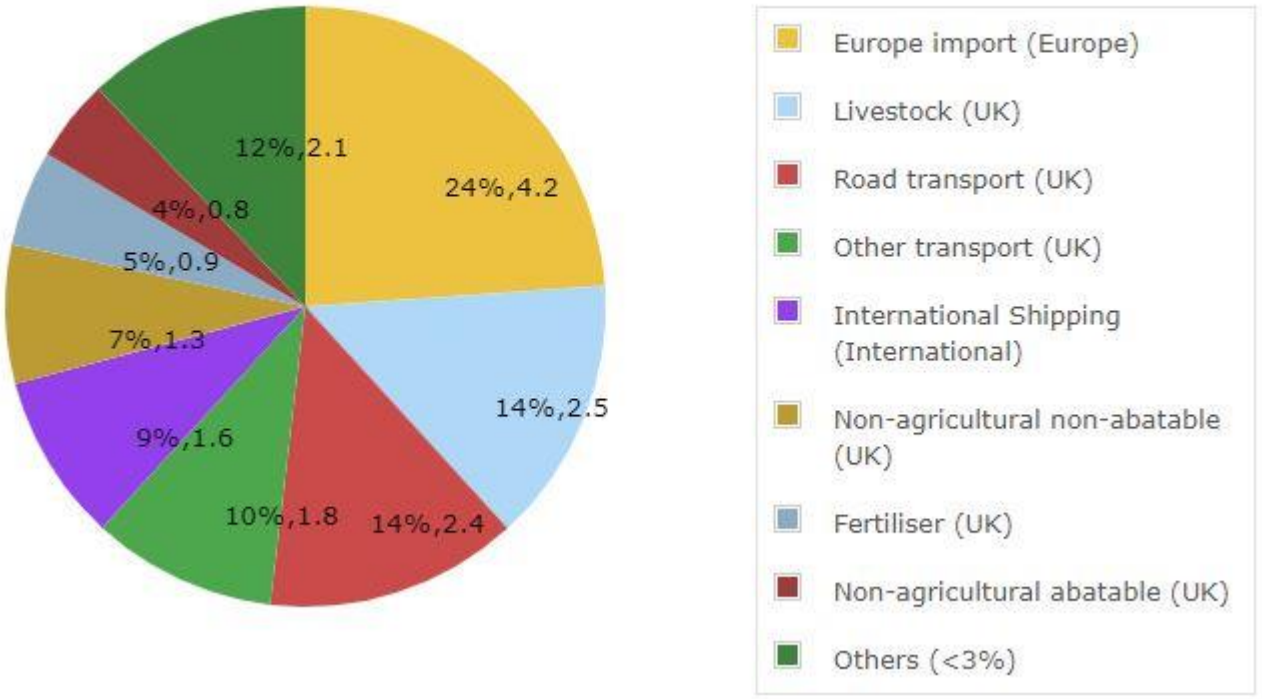


Thames Basin Heath SPA/SAC

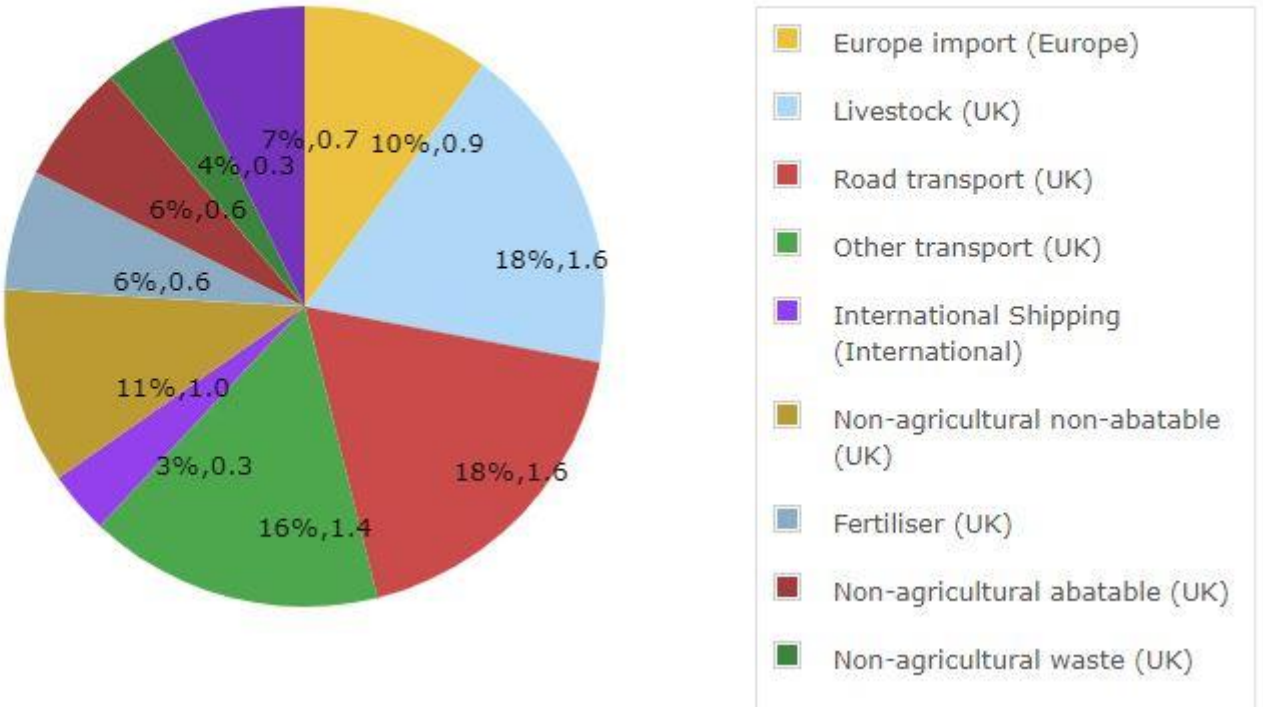
Caprimulgus europaeus - European nightjar

Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen | Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Coniferous woodland				
Maximum: 26.46 Minimum: 19.74 Average: 21.65	Maximum: 1.89 | 0.25 Minimum: 1.41 | 0.18 Average: 1.55 | 0.21	Maximum: 1.55 Minimum: 0.96 Average: 1.1	Maximum: 31.17 Minimum: 13.19 Average: 16.95	Maximum: 0.59 Minimum: 0.24 Average: 0.31
 Click icon to view full concentration and deposition across the whole site				
Broad Habitat: Dwarf shrub heath				
Maximum: 16.52 Minimum: 12.32 Average: 13.55	Maximum: 1.18 | 0.22 Minimum: 0.88 | 0.15 Average: 0.97 | 0.18	Maximum: 1.55 Minimum: 0.96 Average: 1.1	Maximum: 31.17 Minimum: 13.19 Average: 16.95	Maximum: 0.59 Minimum: 0.24 Average: 0.31
 Click icon to view full concentration and deposition across the whole site				
Broad Habitat: Dwarf shrub heath				
Maximum: 16.52 Minimum: 12.32 Average: 13.55	Maximum: 1.18 | 0.22 Minimum: 0.88 | 0.15 Average: 0.97 | 0.18	Maximum: 1.55 Minimum: 0.96 Average: 1.1	Maximum: 31.17 Minimum: 13.19 Average: 16.95	Maximum: 0.59 Minimum: 0.24 Average: 0.31

Pie Chart: Sources ranked by total Nitrogen deposition (Kg N/ha/yr)



Pie Chart: Local contributions to Nitrogen deposition (Kg N/ha/yr) from sources (UK)



Wimbledon Common SAC

Northern Atlantic wet heaths with Erica tetralix

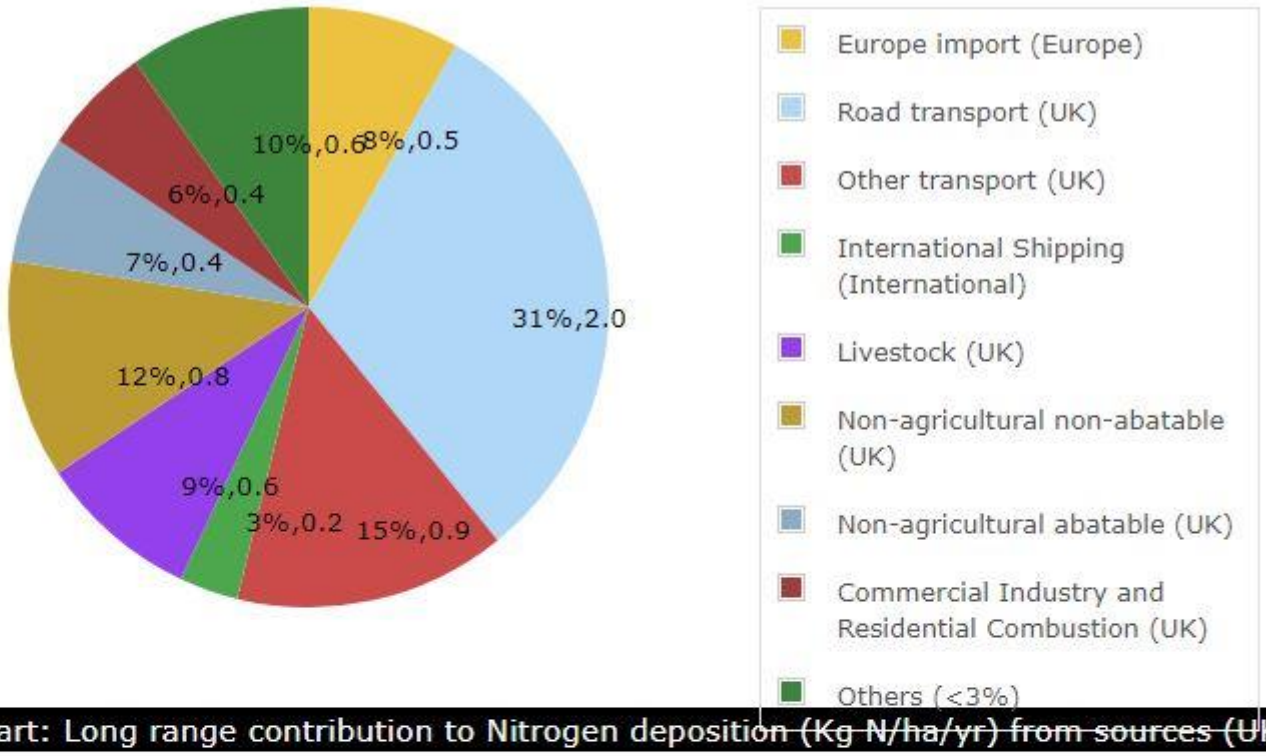
Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen | Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Dwarf shrub heath				
Maximum: 15.96 Minimum: 15.96 Average: 15.96	Maximum: 1.14 | 0.16 Minimum: 1.14 | 0.16 Average: 1.14 | 0.16	Maximum: 1.98 Minimum: 1.98 Average: 1.98	Maximum: 39.88 Minimum: 30.28 Average: 33.25	Maximum: 0.34 Minimum: 0.3 Average: 0.31

Click icon to view full concentration and deposition across the whole site

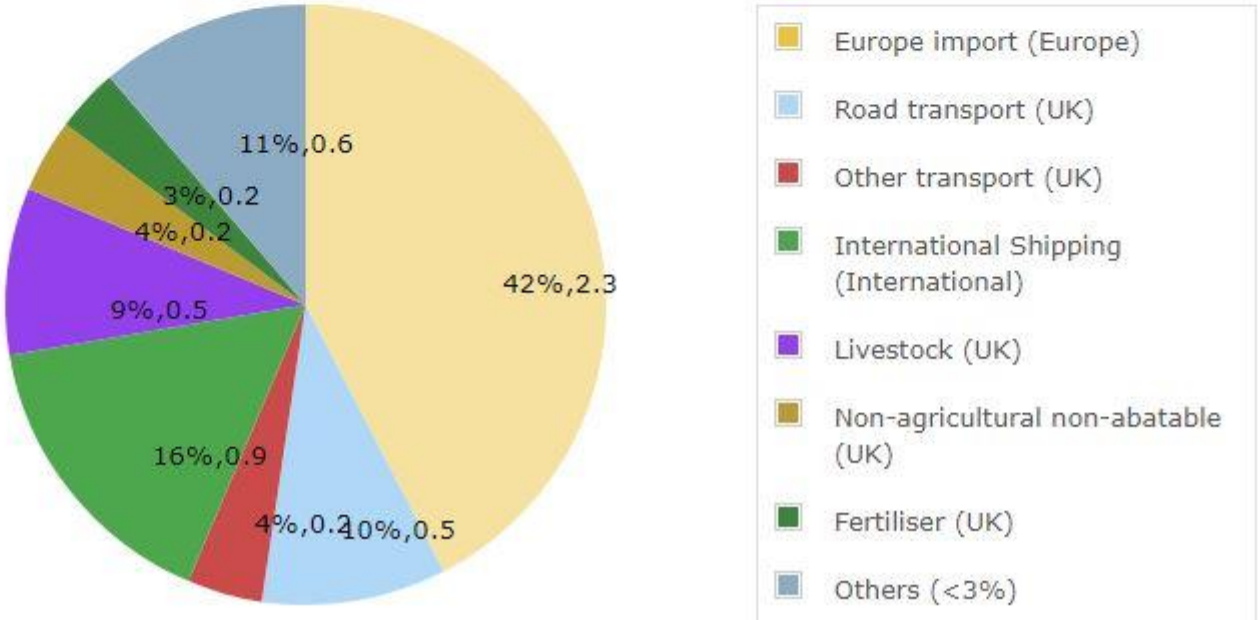
European dry heaths

Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen | Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Dwarf shrub heath				
Maximum: 15.96 Minimum: 15.96 Average: 15.96	Maximum: 1.14 | 0.16 Minimum: 1.14 | 0.16 Average: 1.14 | 0.16	Maximum: 1.98 Minimum: 1.98 Average: 1.98	Maximum: 39.88 Minimum: 30.28 Average: 33.25	Maximum: 0.34 Minimum: 0.3 Average: 0.31

Pie Chart: Local contributions to Nitrogen deposition (Kg N/ha/yr) from sources (UK)



Pie Chart: Long range contribution to Nitrogen deposition (Kg N/ha/yr) from sources (UK)



2. Sample Locations for each SAC sites

These more accurate sample locations consider nitrogen deposition at a more specific point, as well as providing background information on other pollutants. Considering sample points as opposed to the Site level critical load (i.e. an overall figure for all the units that make up the SAC).

Mole Gap to Reigate Escarpment SAC – Reigate Hill NT SSSI (Unit 25)

Habitat: Broadleaved, Mixed and Yew Woodland

Grid Reference: 525535,152089

Grid Easting: 527500 to the 5km mid point (metres)

Grid Northing: 152500 to the 5km mid point (metres)

Grid Easting: 525500 to the 1km mid point (metres)

Grid Easting: 152500 to the 1km mid point (metres)

Nitrogen deposition (nutrient nitrogen)		
Critical load range	**Deposition**	**Exceedance**
Fagus woodland (beech) (G1.6)		
10 - 20 Kg N/ha/year For HRA/AA purposes assuming 10 (as per APIS recommendation)	28.56 Kg N/ha/year Data Year: 2014 - 2016	[18.56] to [8.56] Kg N/ha/year In exceedance

Nitrogen Oxides		
Critical Level (µg NOx/m3 annual mean)	**Concentration**	**Exceedance**
F*agus woodland (beech) (G1.6)*		
30 µg NOx (as NO2) m-3	31.97 µg NOx (as NO2) m-3 Data Year: 2014 - 2016	In exceedance

Ammonia		
Critical level	**Concentration**	**Exceedance**
Fagus woodland (beech) (G1.6)		
1.0 - 3 µg m-3	1.58 µg m-3 Data Year: 2014 - 2016	[1.0] to [-1.42] µg m-3 Partly in exceedance

Acid Deposition		
Critical load class and value	**Deposition**	**Exceedance**
Broadleafed/Coniferous unmanaged woodland		

CLmaxS: 2.075 CLminN: 0.142 CLmaxN: 2.217 (keq/ha/yr)	2.13 (N: 2.04 | S: 0.24) (keq/ha/yr) Data Year: 2014 - 2016	No exceedance

Nitrogen Oxides		
Critical Level (µg NOx/m3 annual mean)	**Concentration**	**Exceedance**
Fagus woodland (beech) (G1.6)		
30 µg NOx (as NO2) m-3	31.97 µg NOx (as NO2) m-3 Data Year: 2014 - 2016	In exceedance

Sulphur Dioxide		
Critical level	**Concentration**	**Exceedance**
Fagus woodland (beech) (G1.6)		
20 µg m-3	1.31 µg m-3 Data Year: 2014 - 2016	-18.69 µg m-3 No exceedance

Mole Gap to Reigate Escarpment SAC – Colley Hill SSSI (Unit 23)

Habitat: Sub-atlantic semi-dry calcareous grassland

Grid Reference: 524524,152300

Grid Easting: 522500 to the 5km mid point (metres)

Grid Northing: 152500 to the 5km mid point (metres)

Grid Easting: 524500 to the 1km mid point (metres)

Grid Easting: 152500 to the 1km mid point (metres)

Nitrogen deposition (nutrient nitrogen)		
Critical load range	**Deposition**	**Exceedance**
Sub-atlantic semi-dry calcareous grassland		
15 - 25 Kg N/ha/year For HRA/AA purposes assuming 10 (as per APIS recommendation)	16.1 Kg N/ha/year Data Year: 2014 - 2016	[1.1] to [-8.9] Kg N/ha/year Partly in exceedance

Nitrogen Oxides		
Critical Level (µg NOx/m3 annual mean)	**Concentration**	**Exceedance**
Sub-atlantic semi-dry calcareous grassland		

30 µg NOx (as NO2) m-3	30.41 µg NOx (as NO2) m-3 Data Year: 2014 - 2016	In exceedance

Ammonia		
Critical level	**Concentration**	**Exceedance**
Sub-atlantic semi-dry calcareous grassland		
1.0 - 3 µg m-3	1.3 µg m-3 Data Year: 2014 - 2016	[1.0] to [-1.7] µg m-3 Partly in exceedance

Acid Deposition		
Critical load class and value	**Deposition**	**Exceedance**
B Calcareous grassland (using base cation)		
CLmaxS: 4 CLminN: 0.856 CLmaxN: 4.856 (keq/ha/yr)	1.23 (N: 1.15 | S: 0.19) (keq/ha/yr) Data Year: 2014 - 2016	No exceedance

Sulphur Dioxide		
Critical level	**Concentration**	**Exceedance**
Sub-atlantic semi-dry calcareous grassland		
20 µg m-3	1.13 µg m-3 Data Year: 2014 - 2016	-18.87 µg m-3 No exceedance

Mole Gap to Reigate Escarpment SAC - Dawcombe SSSI (Unit 36)

Habitat: Calcareous grassland

Grid Reference: 521396, 152413

Grid Easting: 522500 to the 5km mid point (metres)

Grid Northing: 152500 to the 5km mid point (metres)

Grid Easting: 521500 to the 1km mid point (metres)

Grid Easting: 152500 to the 1km mid point (metres)

Nitrogen deposition (nutrient nitrogen)		
Critical load range	**Deposition**	**Exceedance**
Sub-atlantic semi-dry calcareous grassland (E1.26)		
15 - 25 Kg N/ha/year For HRA/AA purposes assuming 15 (as per APIS recommendation)	16.1 Kg N/ha/year Data Year: 2014 - 2016	[1.1] to [-8.9] Kg N/ha/year In exceedance

Nitrogen Oxides		
Critical Level (µg NOx/m3 annual mean)	**Concentration**	**Exceedance**
Sub-atlantic semi-dry calcareous grassland (E1.26)		
30 µg NOx (as NO2) m-3	18.42 µg NOx (as NO2) m-3	No exceedance

	Data Year: 2014 - 2016	

Ammonia		
Critical level	**Concentration**	**Exceedance**
Sub-atlantic semi-dry calcareous grassland		
1.0 - 3 µg m-3	1.3 µg m-3 Data Year: 2014 - 2016	[1.0] to [-1.7] µg m-3 Partly in exceedance

Acid Deposition		
Critical load class and value	**Deposition**	**Exceedance**
B Calcareous grassland (using base cation)		
CLmaxS: 4 CLminN: 0.856 CLmaxN: 4.856 (keq/ha/yr)	1.23 (N: 1.15 | S: 0.19) (keq/ha/yr) Data Year: 2014 - 2016	No exceedance

Sulphur Dioxide		
Critical level	**Concentration**	**Exceedance**
Sub-atlantic semi-dry calcareous grassland (E1.26)		
20 µg m-3	1.13 µg m-3 Data Year: 2014 - 2016	-18.87 µg m-3 No exceedance

Mole Gap to Reigate Escarpment SAC - Dawcombe Wood SSSI (Unit 35)

Habitat: Broadleaved, Mixed and Yew Woodland - Lowland

Grid Reference: 521276,152676

Grid Easting: 522500 to the 5km mid point (metres)

Grid Northing: 152500 to the 5km mid point (metres)

Grid Easting: 521500 to the 1km mid point (metres)

Grid Easting: 152500 to the 1km mid point (metres)

Nitrogen deposition (nutrient nitrogen)		
Critical load range	**Deposition**	**Exceedance**
Broadleaved deciduous woodland (G1)		
10 - 20 Kg N/ha/year For HRA/AA purposes assuming 10 (as per APIS recommendation)	25.76 Kg N/ha/year Data Year: 2014 - 2016	[15.76] to [5.76] Kg N/ha/year In exceedance

Nitrogen Oxides		
Critical Level (µg NOx/m3 annual mean)	**Concentration**	**Exceedance**
Broadleaved deciduous woodland (G1)		
30 µg NOx (as NO2) m-3	18.42 µg NOx (as NO2) m-3 Data Year: 2014 - 2016	In exceedance

Ammonia		
Critical level	**Concentration**	**Exceedance**
Broadleaved deciduous woodland (G1)		
1.0 - 3 µg m-3	1.3 µg m-3 Data Year: 2014 - 2016	[1.0] to [-1.7] µg m-3 Partly in exceedance

Acid Deposition		
Critical load class and value	**Deposition**	**Exceedance**
Broadleafed/Coniferous unmanaged woodland		
CLmaxS: 11.221	1.92 (N: 1.84 | S: 0.23 (keq/ha/yr)	No exceedance

CLminN: 0.142 CLmaxN: 11.363(keq/ha/yr)	Data Year: 2014 - 2016	

Sulphur Dioxide		
Critical level	**Concentration**	**Exceedance**
Broadleaved deciduous woodland (G1)		
20 µg m-3	1.13 µg m-3 Data Year: 2014 - 2016	-18.87 µg m-3 No exceedance

Thames Basin Heath SAC/SPA Ockham and Wisley Commons SSSI - Boldermere (Unit 7)

Habitat: Dwarf Shrub Heath - Lowland

Grid Reference: 507769, 158586

Grid Easting: 507500 to the 5km mid point (metres)

Grid Northing: 157500 to the 5km mid point (metres)

Grid Easting: 507500 to the 1km mid point (metres)

Grid Easting: 158500 to the 1km mid point (metres)

Nitrogen deposition (nutrient nitrogen)		
Critical load range	**Deposition**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
10 - 20 Kg N/ha/year For HRA/AA purposes assuming 10 (as per APIS recommendation)	14 Kg N/ha/year Data Year: 2014 - 2016	[4] to [-6] Kg N/ha/year In exceedance

Nitrogen Oxides		
Critical Level **(µg NOx/m3** **annual mean)**	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		

30 µg NOx (as NO2) m-3	30.73 µg NOx (as NO2) m-3 Data Year: 2014 - 2016	In exceedance

Ammonia		
Critical level	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
1.0 - 3 µg m-3	1.16 µg m-3 Data Year: 2014 - 2016	[1.0] to [-1.84]] µg m-3 Partly in exceedance

Acid Deposition		
Critical load class and value	**Deposition**	**Exceedance**
Dwarf shrub heath		
CLmaxS: 0.24 CLminN: 0.642 CLmaxN: 0.882 (keq/ha/yr)	1.08 (N: 1 | S: 0.18) (keq/ha/yr) Data Year: 2014 - 2016	In exceedance

Sulphur Dioxide		
Critical level	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
20 µg m-3	1.16 µg m-3 Data Year: 2014 - 2016	-18.84 µg m-3 No exceedance

Thames Basin Heath SPA/SAC Ockham and Wisley Commons SSSI - Wisley Common (W) (Unit 5)

Habitat: Dwarf Shrub Heath – Lowland

Grid Reference: 506946, 158197

Grid Easting: 507500 to the 5km mid point (metres)

Grid Northing: 157500 to the 5km mid point (metres)

Grid Easting: 506500 to the 1km mid point (metres)

Grid Easting: 158500 to the 1km mid point (metres)

Nitrogen deposition (nutrient nitrogen)		
Critical load range	**Deposition**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
10 - 20 Kg N/ha/year For HRA/AA purposes assuming 10 (as per APIS recommendation)	14 Kg N/ha/year Data Year: 2014 - 2016	[4] to [-6] Kg N/ha/year In exceedance

Nitrogen Oxides		
Critical Level (µg NOx/m3 annual mean)	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		

30 µg NOx (as NO2) m-3	30.73 µg NOx (as NO2) m-3 Data Year: 2014 - 2016	In exceedance

Ammonia		
Critical level	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
1.0 - 3 µg m-3	1.16 µg m-3 Data Year: 2014 - 2016	[1.0] to [-1.84]] µg m-3 Partly in exceedance

Acid Deposition		
Critical load class and value	**Deposition**	**Exceedance**
Dwarf shrub heath		
CLmaxS: 0.24 CLminN: 0.642 CLmaxN: 0.882 (keq/ha/yr)	1.08 (N: 1 | S: 0.18) (keq/ha/yr) Data Year: 2014 - 2016	No exceedance

Sulphur Dioxide		
Critical level	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
20 µg m-3	1.16 µg m-3 Data Year: 2014 - 2016	-18.84 µg m-3 No exceedance

Thames Basin Heath SPA/SAC Ockham and Wisley Commons SSSI - OCKHAM COMMON (Unit 9)

Habitat: Dwarf Shrub Heath - Lowland

Grid Reference: 508110, 159070

Grid Easting: 507500 to the 5km mid point (metres)

Grid Northing: 157500 to the 5km mid point (metres)

Grid Easting: 508500 to the 1km mid point (metres)

Grid Easting: 159500 to the 1km mid point (metres

Nitrogen deposition (nutrient nitrogen)		
Critical load range	**Deposition**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
10 - 20 Kg N/ha/year For HRA/AA purposes assuming 10 (as per APIS recommendation)	14 Kg N/ha/year Data Year: 2014 - 2016	[4] to [-6] Kg N/ha/year In exceedance

Nitrogen Oxides		
Critical Level (µg NOx/m3 annual mean)	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		

30 µg NOx (as NO2) m-3	30.73 µg NOx (as NO2) m-3 Data Year: 2014 - 2016	In exceedance

Ammonia		
Critical level	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
1.0 - 3 µg m-3	1.16 µg m-3 Data Year: 2014 - 2016	[1.0] to [-1.84]] µg m-3 Partly in exceedance

Acid Deposition		
Critical load class and value	**Deposition**	**Exceedance**
Dwarf shrub heath		
CLmaxS: 0.24 CLminN: 0.642 CLmaxN: 0.882 (keq/ha/yr)	1.08 (N: 1 | S: 0.18) (keq/ha/yr) Data Year: 2014 - 2016	No exceedance

Sulphur Dioxide		
Critical level	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
20 µg m-3	1.16 µg m-3 Data Year: 2014 - 2016	-18.84 µg m-3 No exceedance

Wimbledon Common SAC Putney Heath - Wandsworth SSSI (Unit 1)
Habitat: Dwarf Shrub Heath - Lowland

Grid Reference: 522862, 173126

Grid Easting: 522500 to the 5km mid point (metres)

Grid Northing: 172500 to the 5km mid point (metres)

Grid Easting: 522500 to the 1km mid point (metres)

Grid Easting: 173500 to the 1km mid point (metres)

Nitrogen deposition (nutrient nitrogen)		
Critical load range	**Deposition**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
10 - 20 Kg N/ha/year For HRA/AA purposes assuming 10 (as per APIS recommendation)	15.96 Kg N/ha/year Data Year: 2014 - 2016	[5.96] to [-4.04] Kg N/ha/year In exceedance

Nitrogen Oxides		
Critical Level (µg NOx/m3 annual mean)	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
30 µg NOx (as NO2) m-3	42.45 µg NOx (as NO2) m-3	In exceedance

	Data Year: 2014 - 2016	

Ammonia		
Critical level	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
1.0 - 3 µg m-3	1.98 µg m-3 Data Year: 2014 - 2016	[1.0] to [-1.02] µg m-3 Partly in exceedance

Acid Deposition		
Critical load class and value	**Deposition**	**Exceedance**
Dwarf shrub heath		
CLmaxS: 0.88 CLminN: 0.714 CLmaxN: 1.594 (keq/ha/yr)	1.22 (N: 1.14 | S: 0.16) (keq/ha/yr) Data Year: 2014 - 2016	No exceedance

Sulphur Dioxide		
Critical level	**Concentration**	**Exceedance**
Northern wet heath: Erica tetralix dominated wet heath (F4.11)		
20 µg m-3	1.19 µg m-3 Data Year: 2014 - 2016	-18.81 µg m-3 No exceedance

Wimbledon Common SAC - Woodland Wandsworth SSSI (Unit 6)

Habitat Type: Broadleaved, mixed and yew woodland

Grid Reference: 522756, 173152

Grid Easting: 522500 to the 5km mid point (metres)

Grid Northing: 172500 to the 5km mid point (metres)

Grid Easting: 522500 to the 1km mid point (metres)

Grid Easting: 173500 to the 1km mid point (metres)

Nitrogen deposition (nutrient nitrogen)		
Critical load range	**Deposition**	**Exceedance**
Broadleaved deciduous woodland (G1)		
10 - 20 Kg N/ha/year For HRA/AA purposes assuming 10 (as per APIS recommendation)	27.16 Kg N/ha/year Data Year: 2014 - 2016	[17.16] to [7.16] Kg N/ha/year In exceedance

Nitrogen Oxides		
Critical Level (µg NOx/m3 annual mean)	**Concentration**	**Exceedance**
Broadleaved deciduous woodland (G1)		

30 µg NOx (as NO2) m-3	42.45 µg NOx (as NO2) m-3 Data Year: 2014 - 2016	In exceedance

Ammonia		
Critical level	**Concentration**	**Exceedance**
Broadleaved deciduous woodland (G1)		
1.0 - 3 µg m-3	1.98 µg m-3 Data Year: 2014 - 2016	[1.0] to [-1.7] µg m-3 Partly in exceedance

Acid Deposition		
Critical load class and value	**Deposition**	**Exceedance**
Broadleafed/Coniferous unmanaged woodland		
CLmaxS: 1.48 CLminN: 0.357 CLmaxN: 1.837 (keq/ha/yr)	2.01 (N: 1.94 | S: 0.19) (keq/ha/yr) Data Year: 2014 - 2016	In exceedance

Sulphur Dioxide		
Critical level	**Concentration**	**Exceedance**
Broadleaved deciduous woodland (G1)		
20 µg m-3	1.19 µg m-3 Data Year: 2014 - 2016	-18.81 µg m-3 No exceedance

Appendix 9 Air Quality Modelling Findings (from AECOM)

Mole Gap to Reigate Escarpment SAC; Thames Basin Heath SPA; Wimbledon Common SAC

Ammonia Concentrations

B2032 Pebble Hill Road

Distance From Road (m)	Annual Mean NH_3 (ug/m^3) BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)
0.00	3.42	3.35	3.71	3.95	0.24	0.60	0.53
5.00	2.46	2.42	2.62	2.74	0.13	0.32	0.28
10.00	2.18	2.15	2.30	2.39	0.10	0.25	0.21
15.00	2.00	1.98	2.10	2.17	0.08	0.20	0.17
20.00	1.89	1.86	1.96	2.02	0.06	0.16	0.14
25.00	1.83	1.81	1.90	1.95	0.06	0.14	0.12
30.00	1.77	1.76	1.84	1.89	0.05	0.13	0.11
35.00	1.73	1.71	1.79	1.83	0.04	0.12	0.10
40.00	1.70	1.69	1.76	1.80	0.04	0.11	0.09
45.00	1.68	1.67	1.73	1.77	0.04	0.10	0.09
50.00	1.66	1.65	1.71	1.74	0.04	0.10	0.08
55.00	1.65	1.63	1.69	1.72	0.03	0.09	0.08
60.00	1.63	1.62	1.67	1.71	0.03	0.09	0.08
65.00	1.62	1.61	1.66	1.69	0.03	0.09	0.07
70.00	1.61	1.60	1.65	1.68	0.03	0.08	0.07
75.00	1.60	1.59	1.64	1.67	0.03	0.08	0.07
80.00	1.59	1.58	1.63	1.66	0.03	0.08	0.07
85.00	1.59	1.58	1.62	1.65	0.03	0.08	0.06
90.00	1.58	1.57	1.62	1.64	0.03	0.07	0.06
95.00	1.58	1.56	1.61	1.64	0.03	0.07	0.06
100.00	1.57	1.56	1.61	1.63	0.03	0.07	0.06
105.00	1.57	1.55	1.60	1.63	0.03	0.07	0.06
110.00	1.56	1.55	1.60	1.62	0.02	0.07	0.06
115.00	1.56	1.55	1.59	1.62	0.02	0.07	0.06
120.00	1.56	1.55	1.59	1.61	0.02	0.07	0.06
125.00	1.55	1.54	1.59	1.61	0.02	0.07	0.06
130.00	1.55	1.54	1.58	1.61	0.02	0.07	0.06
135.00	1.55	1.54	1.58	1.60	0.02	0.07	0.05
140.00	1.55	1.54	1.58	1.60	0.02	0.06	0.05
145.00	1.54	1.53	1.58	1.60	0.02	0.06	0.05
150.00	1.54	1.53	1.57	1.60	0.02	0.06	0.05

185.00	1.53	1.52	1.56	1.58	0.02	0.06	0.05
190.00	1.53	1.52	1.56	1.58	0.02	0.06	0.05
195.00	1.53	1.52	1.56	1.58	0.02	0.06	0.05
200.00	1.53	1.52	1.56	1.58	0.02	0.06	0.05

A217 Reigate Hill (Transect 1)

			Annual Mean NH_3 (ug/m^3)				
Distance From Road (m)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)
0.20	2.37	2.36	2.49	2.66	0.17	0.31	0.29
5.20	2.06	2.04	2.13	2.22	0.09	0.18	0.16
10.20	1.96	1.95	2.02	2.09	0.07	0.14	0.13
15.20	1.90	1.89	1.95	2.01	0.06	0.11	0.10
20.20	1.87	1.86	1.91	1.96	0.05	0.10	0.09
25.20	1.85	1.84	1.88	1.93	0.04	0.09	0.08
30.20	1.83	1.82	1.86	1.90	0.04	0.08	0.07
25.20	1.81	1.81	1.85	1.88	0.04	0.08	0.07
40.20	1.81	1.80	1.84	1.87	0.03	0.07	0.06
45.20	1.80	1.79	1.83	1.86	0.03	0.07	0.06
50.20	1.79	1.78	1.82	1.85	0.03	0.07	0.06
55.20	1.79	1.78	1.81	1.84	0.03	0.06	0.06
60.20	1.78	1.77	1.81	1.83	0.03	0.06	0.05
65.20	1.78	1.77	1.80	1.83	0.03	0.06	0.05
70.20	1.77	1.77	1.80	1.83	0.03	0.06	0.05
75.20	1.77	1.76	1.80	1.82	0.02	0.06	0.05
80.20	1.77	1.76	1.79	1.82	0.02	0.06	0.05
85.20	1.77	1.76	1.79	1.82	0.02	0.06	0.05
90.20	1.77	1.76	1.79	1.81	0.02	0.05	0.05
95.20	1.76	1.76	1.79	1.81	0.02	0.05	0.05
100.20	1.76	1.76	1.79	1.81	0.02	0.05	0.05
105.20	1.76	1.75	1.79	1.81	0.02	0.05	0.05
110.20	1.76	1.75	1.78	1.81	0.02	0.05	0.04
115.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
120.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
125.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
130.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
135.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
140.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
145.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
150.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
155.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
160.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
165.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
170.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
175.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
180.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
185.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
190.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
195.20	1.76	1.75	1.78	1.80	0.02	0.05	0.04
200.20	1.76	1.75	1.79	1.80	0.02	0.05	0.04

A217 Reigate Hill (Transect 1)

Distance From Road (m)	Annual Mean NOx (ug/m³)							Annual Mean Total N Dep (kg N/ha/yr)							Annual Mean Total N Acid Dep (keq/ha/yr)						
	BL	Proj BL	DM	DS		Change		BL	Proj BL	DM	DS		Change		BL	Proj BL	DM	DS		Change	
	Baseline	Proj Baseline	(Base 2033)	(Scn1 2033)	(DS-DM)	(DS-ProjBL)	(DS-BL)	Baseline	Proj Baseline	(Base 2033)	(Scn1 2033)	(DS-DM)	(DS-ProjBL)	(DS-BL)	Baseline	Proj Baseline	(Base 2033)	(Scn1 2033)	(DS-DM)	(DS-ProjBL)	(DS-BL)
0.20	120.76	73.47	83.96	97.34	13.38	23.86	-23.42	22.47	18.10	18.81	20.52	1.71	2.42	-1.95	2.97	2.98	2.86	2.97	0.12	0.00	0.00
5.20	74.39	46.15	51.91	59.15	7.23	13.00	-15.25	20.01	16.23	16.67	18.03	1.36	1.80	-1.97	2.81	2.80	2.72	2.81	0.09	0.01	0.00
10.20	60.89	38.27	42.64	48.06	5.42	9.80	-12.83	19.23	15.67	16.02	17.26	1.25	1.59	-1.97	2.76	2.75	2.67	2.76	0.09	0.01	0.00
15.20	51.93	33.05	36.51	40.72	4.21	7.67	-11.21	18.70	15.29	15.57	16.74	1.17	1.45	-1.96	2.73	2.71	2.65	2.73	0.08	0.02	0.00
20.20	46.47	29.88	32.77	36.24	3.47	6.36	-10.23	18.36	15.05	15.30	16.41	1.11	1.36	-1.95	2.71	2.68	2.63	2.71	0.08	0.02	0.00
25.20	43.56	28.19	30.78	33.86	3.08	5.67	-9.70	18.18	14.93	15.15	16.24	1.09	1.31	-1.94	2.69	2.67	2.62	2.69	0.08	0.02	0.00
30.20	40.69	26.53	28.82	31.51	2.69	4.98	-9.18	18.00	14.80	15.01	16.07	1.06	1.26	-1.93	2.68	2.66	2.61	2.68	0.07	0.02	0.00
25.20	38.55	25.28	27.36	29.75	2.40	4.47	-8.79	17.87	14.71	14.90	15.94	1.04	1.23	-1.93	2.67	2.65	2.60	2.68	0.07	0.03	0.00
40.20	37.14	24.47	26.40	28.60	2.20	4.13	-8.54	17.78	14.65	14.83	15.85	1.02	1.20	-1.93	2.67	2.64	2.60	2.67	0.07	0.03	0.00
45.20	35.76	23.67	25.46	27.47	2.01	3.80	-8.29	17.69	14.59	14.76	15.77	1.01	1.18	-1.92	2.66	2.64	2.59	2.66	0.07	0.03	0.00
50.20	34.82	23.12	24.81	26.69	1.88	3.57	-8.12	17.63	14.55	14.71	15.71	1.00	1.16	-1.92	2.66	2.63	2.59	2.66	0.07	0.03	0.00
55.20	31.91	21.17	22.77	24.53	1.76	3.36	-7.38	17.58	14.52	14.67	15.66	0.99	1.15	-1.92	2.65	2.62	2.58	2.65	0.07	0.03	0.00
60.20	31.10	20.70	22.21	23.86	1.65	3.16	-7.24	17.53	14.48	14.63	15.61	0.98	1.13	-1.92	2.65	2.62	2.58	2.65	0.07	0.03	0.00
65.20	30.52	20.37	21.82	23.38	1.57	3.02	-7.13	17.49	14.46	14.60	15.58	0.98	1.12	-1.91	2.64	2.61	2.58	2.64	0.07	0.03	0.00
70.20	29.91	20.01	21.40	22.88	1.48	2.87	-7.03	17.45	14.43	14.57	15.54	0.97	1.11	-1.91	2.64	2.61	2.57	2.64	0.07	0.03	0.00
75.20	29.39	19.71	21.05	22.45	1.41	2.74	-6.93	17.42	14.41	14.55	15.51	0.96	1.10	-1.91	2.64	2.61	2.57	2.64	0.07	0.03	0.00
80.20	29.00	19.49	20.78	22.13	1.35	2.65	-6.87	17.40	14.39	14.53	15.49	0.96	1.09	-1.91	2.64	2.61	2.57	2.64	0.07	0.03	0.00
85.20	28.62	19.27	20.52	21.82	1.30	2.55	-6.80	17.37	14.38	14.51	15.47	0.96	1.09	-1.91	2.64	2.60	2.57	2.64	0.07	0.03	0.00
90.20	28.25	19.06	20.27	21.52	1.25	2.46	-6.74	17.35	14.36	14.49	15.44	0.95	1.08	-1.91	2.63	2.60	2.57	2.64	0.07	0.03	0.00
95.20	27.98	18.90	20.08	21.29	1.20	2.39	-6.69	17.33	14.35	14.48	15.43	0.95	1.08	-1.91	2.63	2.60	2.57	2.64	0.07	0.03	0.00
100.20	27.68	18.72	19.88	21.04	1.16	2.32	-6.64	17.32	14.34	14.46	15.41	0.95	1.07	-1.90	2.63	2.60	2.57	2.63	0.07	0.03	0.00
105.20	27.41	18.57	19.69	20.82	1.12	2.25	-6.59	17.30	14.33	14.45	15.40	0.94	1.07	-1.90	2.63	2.60	2.57	2.63	0.07	0.03	0.00
110.20	27.20	18.45	19.55	20.65	1.09	2.20	-6.56	17.29	14.32	14.44	15.38	0.94	1.06	-1.90	2.63	2.60	2.57	2.63	0.07	0.03	0.00
115.20	27.00	18.33	19.42	20.48	1.06	2.15	-6.52	17.28	14.31	14.43	15.37	0.94	1.06	-1.90	2.63	2.60	2.56	2.63	0.07	0.03	0.00
120.20	26.80	18.21	19.28	20.31	1.03	2.10	-6.49	17.26	14.31	14.42	15.36	0.94	1.06	-1.90	2.63	2.60	2.56	2.63	0.07	0.03	0.00
125.20	26.64	18.12	19.17	20.17	1.01	2.05	-6.47	17.25	14.30	14.42	15.35	0.94	1.05	-1.90	2.63	2.60	2.56	2.63	0.07	0.03	0.00
130.20	26.47	18.02	19.05	20.03	0.98	2.01	-6.44	17.25	14.29	14.41	15.34	0.93	1.05	-1.90	2.63	2.60	2.56	2.63	0.07	0.03	0.00
135.20	26.33	17.94	18.96	19.92	0.96	1.98	-6.42	17.24	14.29	14.41	15.34	0.93	1.05	-1.90	2.63	2.60	2.56	2.63	0.07	0.03	0.00
140.20	26.19	17.85	18.85	19.79	0.94	1.94	-6.39	17.23	14.28	14.40	15.33	0.93	1.05	-1.90	2.63	2.59	2.56	2.63	0.07	0.03	0.00
145.20	26.05	17.77	18.76	19.68	0.91	1.90	-6.37	17.22	14.28	14.39	15.32	0.93	1.04	-1.90	2.63	2.59	2.56	2.63	0.07	0.04	0.00
150.20	25.96	17.72	18.70	19.60	0.90	1.88	-6.36	17.22	14.28	14.39	15.32	0.93	1.04	-1.90	2.63	2.59	2.56	2.63	0.07	0.04	0.00
155.20	25.84	17.65	18.61	19.50	0.88	1.85	-6.34	17.21	14.27	14.39	15.31	0.93	1.04	-1.90	2.63	2.59	2.56	2.63	0.07	0.04	0.00
160.20	25.73	17.59	18.54	19.40	0.86	1.82	-6.33	17.21	14.27	14.38	15.31	0.92	1.04	-1.90	2.63	2.59	2.56	2.63	0.07	0.04	0.00
165.20	25.61	17.52	18.46	19.30	0.84	1.78	-6.31	17.20	14.27	14.38	15.30	0.92	1.04	-1.90	2.63	2.59	2.56	2.63	0.07	0.04	0.00
170.20	25.42	17.40	18.32	19.13	0.81	1.73	-6.29	17.19	14.26	14.37	15.29	0.92	1.03	-1.90	2.62	2.59	2.56	2.63	0.07	0.04	0.00
175.20	25.50	17.45	18.38	19.20	0.82	1.75	-6.30	17.19	14.26	14.38	15.30	0.92	1.03	-1.90	2.62	2.59	2.56	2.63	0.07	0.04	0.00
180.20	25.25	17.30	18.21	18.99	0.78	1.68	-6.27	17.18	14.26	14.37	15.29	0.92	1.03	-1.90	2.62	2.59	2.56	2.63	0.07	0.04	0.00
185.20	25.33	17.35	18.26	19.05	0.79	1.70	-6.28	17.19	14.26	14.37	15.29	0.92	1.03	-1.90	2.62	2.59	2.56	2.63	0.07	0.04	0.00
190.20	25.11	17.22	18.11	18.86	0.75	1.64	-6.25	17.18	14.26	14.37	15.28	0.92	1.03	-1.90	2.62	2.59	2.56	2.63	0.07	0.04	0.00

A217 Reigate Hill (Transect 2)

Distance From Road (m)	Annual Mean NOx (ug/m³)							Annual Mean Total N Dep (kg N/ha/yr)							Annual Mean Total N Acid Dep (keq/ha/yr)						
	BL	Proj BL	DM	DS	Change			BL	Proj BL	DM	DS	Change			BL	Proj BL	DM	DS	Change		
	Baseline	Proj Baseline	(Base 2033)	(Scn1 2033)	(DS-DM)	(DS-ProjBL)	(DS-BL)	Baseline	Proj Baseline	(Base 2033)	(Scn1 2033)	(DS-DM)	(DS-ProjBL)	(DS-BL)	Baseline	Proj Baseline	(Base 2033)	(Scn1 2033)	(DS-DM)	(DS-ProjBL)	(DS-BL)
4.60	86.28	53.48	60.48	69.30	8.83	15.83	-16.97	20.70	16.76	17.28	18.73	1.46	1.97	-1.97	2.85	2.85	2.76	2.85	0.10	0.01	0.00
9.60	69.85	43.79	49.11	55.77	6.65	11.98	-14.08	19.78	16.08	16.49	17.81	1.32	1.73	-1.97	2.79	2.78	2.70	2.79	0.09	0.01	0.00
14.60	57.86	36.74	40.84	45.90	5.06	9.16	-11.96	19.09	15.57	15.90	17.12	1.22	1.55	-1.96	2.75	2.73	2.67	2.75	0.08	0.02	0.00
19.60	50.87	32.63	36.02	40.15	4.12	7.52	-10.72	18.67	15.27	15.55	16.71	1.16	1.44	-1.95	2.72	2.70	2.64	2.72	0.08	0.02	0.00
24.60	45.80	29.66	32.53	35.97	3.45	6.32	-9.82	18.35	15.05	15.30	16.41	1.11	1.36	-1.95	2.70	2.68	2.63	2.70	0.08	0.02	0.00
29.60	42.91	27.96	30.54	33.60	3.06	5.63	-9.31	18.18	14.93	15.15	16.24	1.08	1.31	-1.94	2.69	2.67	2.62	2.69	0.08	0.02	0.00
34.60	39.96	26.24	28.51	31.17	2.66	4.93	-8.79	17.99	14.80	15.00	16.06	1.06	1.26	-1.93	2.68	2.66	2.61	2.68	0.07	0.03	0.00
39.60	37.82	24.99	27.04	29.41	2.37	4.42	-8.40	17.86	14.70	14.89	15.93	1.03	1.22	-1.93	2.67	2.65	2.60	2.67	0.07	0.03	0.00
44.60	35.97	23.91	25.77	27.89	2.12	3.99	-8.08	17.74	14.62	14.80	15.81	1.02	1.19	-1.92	2.66	2.64	2.59	2.67	0.07	0.03	0.00
49.60	34.57	23.09	24.81	26.74	1.93	3.65	-7.83	17.65	14.56	14.73	15.73	1.00	1.17	-1.92	2.66	2.63	2.59	2.66	0.07	0.03	0.00
54.60	33.52	22.47	24.09	25.87	1.79	3.40	-7.64	17.58	14.52	14.67	15.67	0.99	1.15	-1.92	2.66	2.63	2.59	2.66	0.07	0.03	0.00
59.60	32.43	21.84	23.34	24.98	1.64	3.14	-7.45	17.51	14.47	14.62	15.60	0.98	1.13	-1.92	2.65	2.62	2.58	2.65	0.07	0.03	0.00
64.60	31.59	21.35	22.77	24.29	1.53	2.94	-7.30	17.46	14.43	14.58	15.55	0.97	1.11	-1.91	2.65	2.62	2.58	2.65	0.07	0.03	0.00
69.60	30.80	20.89	22.22	23.64	1.42	2.75	-7.16	17.41	14.40	14.54	15.50	0.96	1.10	-1.91	2.64	2.61	2.58	2.65	0.07	0.03	0.00
74.60	30.29	20.59	21.87	23.22	1.35	2.63	-7.07	17.38	14.38	14.51	15.47	0.96	1.09	-1.91	2.64	2.61	2.58	2.64	0.07	0.03	0.00
79.60	29.68	20.23	21.45	22.71	1.26	2.48	-6.97	17.34	14.35	14.48	15.43	0.95	1.08	-1.91	2.64	2.61	2.57	2.64	0.07	0.03	0.00
84.60	29.19	19.95	21.12	22.31	1.19	2.36	-6.88	17.31	14.33	14.46	15.40	0.95	1.07	-1.91	2.64	2.61	2.57	2.64	0.07	0.03	0.00
89.60	28.72	19.68	20.80	21.92	1.13	2.25	-6.80	17.28	14.31	14.43	15.38	0.94	1.06	-1.90	2.64	2.61	2.57	2.64	0.07	0.03	0.00
94.60	28.41	19.50	20.58	21.67	1.08	2.17	-6.75	17.26	14.30	14.42	15.36	0.94	1.06	-1.90	2.63	2.60	2.57	2.64	0.07	0.03	0.00
99.60	28.04	19.28	20.33	21.35	1.03	2.08	-6.68	17.24	14.28	14.40	15.34	0.94	1.05	-1.90	2.63	2.60	2.57	2.64	0.07	0.03	0.00
104.60	27.74	19.10	20.12	21.11	0.99	2.00	-6.63	17.22	14.27	14.39	15.32	0.93	1.05	-1.90	2.63	2.60	2.57	2.63	0.07	0.03	0.00
109.60	27.44	18.93	19.91	20.86	0.94	1.93	-6.58	17.20	14.26	14.37	15.30	0.93	1.04	-1.90	2.63	2.60	2.57	2.63	0.07	0.03	0.00
114.60	27.24	18.81	19.78	20.69	0.91	1.88	-6.55	17.19	14.25	14.36	15.29	0.93	1.04	-1.90	2.63	2.60	2.57	2.63	0.07	0.03	0.00
119.60	26.99	18.67	19.61	20.49	0.88	1.82	-6.50	17.17	14.24	14.35	15.28	0.92	1.03	-1.90	2.63	2.60	2.57	2.63	0.07	0.03	0.00
124.60	26.80	18.56	19.48	20.32	0.85	1.77	-6.47	17.16	14.24	14.34	15.27	0.92	1.03	-1.90	2.63	2.60	2.57	2.63	0.07	0.03	0.00
129.60	26.60	18.44	19.34	20.16	0.82	1.71	-6.44	17.15	14.23	14.33	15.25	0.92	1.03	-1.90	2.63	2.60	2.56	2.63	0.07	0.03	0.00
134.60	26.44	18.35	19.23	20.03	0.79	1.68	-6.42	17.14	14.22	14.33	15.25	0.92	1.02	-1.90	2.63	2.60	2.56	2.63	0.07	0.03	0.00
139.60	26.30	18.27	19.13	19.90	0.77	1.64	-6.39	17.13	14.22	14.32	15.24	0.92	1.02	-1.90	2.63	2.59	2.56	2.63	0.07	0.03	0.00
144.60	26.15	18.18	19.03	19.78	0.75	1.60	-6.37	17.13	14.21	14.32	15.23	0.92	1.02	-1.89	2.63	2.59	2.56	2.63	0.07	0.04	0.00
149.60	26.03	18.11	18.95	19.68	0.73	1.57	-6.35	17.12	14.21	14.31	15.23	0.91	1.02	-1.90	2.63	2.59	2.56	2.63	0.07	0.04	0.00
154.60	25.93	18.05	18.88	19.59	0.71	1.54	-6.34	17.11	14.21	14.31	15.22	0.91	1.01	-1.89	2.63	2.59	2.56	2.63	0.07	0.04	0.00
159.60	25.83	17.99	18.81	19.51	0.69	1.51	-6.32	17.11	14.20	14.30	15.22	0.91	1.01	-1.89	2.63	2.59	2.56	2.63	0.07	0.04	0.00
164.60	25.73	17.93	18.74	19.42	0.68	1.48	-6.31	17.10	14.20	14.30	15.21	0.91	1.01	-1.89	2.63	2.59	2.56	2.63	0.07	0.04	0.00
169.60	25.65	17.89	18.69	19.35	0.66	1.46	-6.30	17.10	14.20	14.30	15.21	0.91	1.01	-1.89	2.63	2.59	2.56	2.63	0.07	0.04	0.00
174.60	25.57	17.84	18.63	19.28	0.65	1.44	-6.29	17.10	14.20	14.30	15.21	0.91	1.01	-1.89	2.62	2.59	2.56	2.63	0.07	0.04	0.00
179.60	25.52	17.81	18.59	19.23	0.64	1.42	-6.28	17.10	14.20	14.30	15.20	0.91	1.01	-1.89	2.62	2.59	2.56	2.63	0.07	0.04	0.00
184.60	25.45	17.77	18.55	19.17	0.63	1.40	-6.28	17.09	14.19	14.29	15.20	0.91	1.01	-1.89	2.62	2.59	2.56	2.63	0.07	0.04	0.00
189.60	25.40	17.74	18.51	19.13	0.61	1.39	-6.27	17.09	14.19	14.29	15.20	0.91	1.01	-1.89	2.62	2.59	2.56	2.63	0.07	0.04	0.00
194.60	25.34	17.71	18.47	19.08	0.60	1.37	-6.27	17.09	14.19	14.29	15.20	0.91	1.01	-1.89	2.62	2.59	2.56	2.63	0.07	0.04	0.00
199.60	25.31	17.69	18.45	19.05	0.60	1.36	-6.26	17.09	14.19	14.29	15.20	0.90	1.00	-1.89	2.62	2.59	2.56	2.63	0.07	0.04	0.00

A217 Reigate Hill (Transect 2)

Distance From Road (m)	Annual Mean NH_x (ug/m³) BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)
4.60	2.14	2.13	2.22	2.34	0.11	0.21	0.20
9.60	2.03	2.02	2.09	2.18	0.09	0.16	0.15
14.60	1.95	1.94	2.00	2.07	0.07	0.13	0.12
19.60	1.90	1.89	1.94	2.00	0.06	0.11	0.10
24.60	1.86	1.86	1.90	1.95	0.05	0.10	0.09
29.60	1.85	1.84	1.88	1.93	0.04	0.09	0.08
34.60	1.83	1.82	1.86	1.90	0.04	0.08	0.07
39.60	1.81	1.80	1.84	1.88	0.04	0.08	0.07
44.60	1.80	1.79	1.83	1.86	0.03	0.07	0.06
49.60	1.79	1.78	1.82	1.85	0.03	0.07	0.06
54.60	1.78	1.78	1.81	1.84	0.03	0.06	0.06
59.60	1.78	1.77	1.80	1.83	0.03	0.06	0.05
64.60	1.77	1.76	1.80	1.82	0.03	0.06	0.05
69.60	1.77	1.76	1.79	1.82	0.02	0.06	0.05
74.60	1.76	1.76	1.79	1.81	0.02	0.06	0.05
79.60	1.76	1.75	1.78	1.81	0.02	0.05	0.05
84.60	1.76	1.75	1.78	1.80	0.02	0.05	0.05
89.60	1.76	1.75	1.78	1.80	0.02	0.05	0.04
94.60	1.75	1.75	1.78	1.80	0.02	0.05	0.04
99.60	1.75	1.75	1.77	1.80	0.02	0.05	0.04
104.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
109.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
114.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
119.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
124.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
129.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
134.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
139.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
144.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
149.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
154.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
159.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
164.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
169.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
174.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
179.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
184.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
189.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
194.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04
199.60	1.75	1.74	1.77	1.79	0.02	0.05	0.04

Wimbledon Common SAC

Distance From Road (m)	Annual Mean NH_3 (ug/m^3)							Annual Mean NOx (ug/m^3)							Annual Mean Total N Dep (kg N/ha/yr)						
	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)
0	3.06	3.04	3.21	3.21	0.00	0.18	0.16	164.73	94.64	107.65	107.89	0.25	13.25	-56.84	9.20	6.76	7.59	7.60	0.02	0.84	-1.60
5	2.63	2.62	2.72	2.72	0.00	0.11	0.09	105.36	62.59	70.44	70.59	0.15	8.01	-34.77	6.37	4.63	5.17	5.18	0.01	0.55	-1.19
10	2.47	2.46	2.54	2.54	0.00	0.08	0.07	82.87	50.63	56.52	56.64	0.11	6.00	-26.23	5.21	3.79	4.21	4.22	0.01	0.43	-0.99
15	2.38	2.37	2.43	2.43	0.00	0.07	0.05	69.90	43.77	48.53	48.62	0.09	4.85	-21.28	4.51	3.29	3.64	3.65	0.01	0.36	-0.86
20	2.32	2.31	2.36	2.36	0.00	0.06	0.05	61.28	39.22	43.22	43.30	0.08	4.08	-17.99	4.03	2.96	3.26	3.26	0.01	0.30	-0.77
30	2.24	2.23	2.28	2.28	0.00	0.04	0.04	50.44	33.50	36.55	36.61	0.06	3.11	-13.83	3.41	2.53	2.76	2.77	0.00	0.24	-0.64
40	2.19	2.19	2.22	2.22	0.00	0.04	0.03	43.81	30.01	32.48	32.53	0.05	2.52	-11.28	3.02	2.27	2.46	2.46	0.00	0.20	-0.56
50	2.16	2.16	2.19	2.19	0.00	0.03	0.02	39.33	27.65	29.73	29.77	0.04	2.12	-9.56	2.75	2.09	2.25	2.25	0.00	0.17	-0.50
60	2.14	2.13	2.16	2.16	0.00	0.03	0.02	36.07	25.94	27.73	27.76	0.04	1.83	-8.31	2.55	1.95	2.10	2.10	0.00	0.14	-0.45
70	2.12	2.12	2.14	2.14	0.00	0.02	0.02	33.59	24.63	26.21	26.24	0.03	1.61	-7.35	2.40	1.85	1.98	1.98	0.00	0.13	-0.42
80	2.11	2.10	2.12	2.12	0.00	0.02	0.02	31.65	23.61	25.01	25.04	0.03	1.43	-6.61	2.28	1.77	1.89	1.89	0.00	0.11	-0.39
90	2.10	2.09	2.11	2.11	0.00	0.02	0.02	30.07	22.78	24.05	24.07	0.03	1.29	-6.00	2.18	1.71	1.81	1.81	0.00	0.10	-0.37
100	2.09	2.08	2.10	2.10	0.00	0.02	0.01	27.58	20.93	22.08	22.11	0.03	1.17	-5.47	2.11	1.66	1.75	1.76	0.00	0.10	-0.35
125	2.07	2.07	2.08	2.08	0.00	0.01	0.01	25.15	19.65	20.59	20.61	0.02	0.96	-4.54	1.95	1.56	1.64	1.64	0.00	0.08	-0.31
150	2.06	2.05	2.07	2.07	0.00	0.01	0.01	23.45	18.76	19.55	19.57	0.02	0.81	-3.89	1.84	1.49	1.55	1.56	0.00	0.07	-0.28
175	2.05	2.05	2.06	2.06	0.00	0.01	0.01	22.21	18.10	18.78	18.80	0.02	0.70	-3.41	1.76	1.44	1.49	1.50	0.00	0.06	-0.26
200	2.04	2.04	2.05	2.05	0.00	0.01	0.01	21.26	17.60	18.20	18.22	0.01	0.61	-3.04	1.70	1.40	1.45	1.45	0.00	0.05	-0.25

Thames Basin Heath SPA

Receptor A

Distance From Road (m)	Annual Mean NH_3 (µg/m³)							Annual Mean NOx (µg/m³)							Annual Mean Total N Dep (kg N/ha/yr)						
	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-B
0	6.38	6.14	6.94	7.04	0.09	0.90	0.66	192.86	115.13	131.52	133.41	1.89	18.28	-59.45	19.03	15.89	18.08	18.33	0.25	2.44	-0.7
5	5.22	5.02	5.65	5.72	0.07	0.70	0.51	153.45	92.70	105.49	106.95	1.46	14.25	-46.50	15.46	12.82	14.56	14.76	0.20	1.94	-0.7
10	4.53	4.37	4.89	4.95	0.06	0.58	0.42	130.34	79.60	90.27	91.48	1.21	11.88	-38.87	13.32	11.00	12.47	12.64	0.17	1.64	-0.6
15	4.07	3.93	4.38	4.43	0.05	0.50	0.36	114.66	70.72	79.95	80.99	1.04	10.27	-33.67	11.85	9.75	11.04	11.18	0.15	1.43	-0.6
20	3.74	3.61	4.01	4.05	0.05	0.44	0.32	103.23	64.26	72.44	73.36	0.92	9.09	-29.87	10.76	8.83	9.98	10.11	0.13	1.28	-0.6
30	3.27	3.16	3.49	3.53	0.04	0.36	0.26	87.42	55.33	62.06	62.80	0.74	7.47	-24.61	9.23	7.55	8.50	8.61	0.11	1.06	-0.6
40	2.96	2.87	3.15	3.18	0.03	0.31	0.22	76.88	49.39	55.15	55.78	0.63	6.39	-21.10	8.19	6.69	7.51	7.60	0.09	0.91	-0.5
50	2.74	2.66	2.90	2.93	0.03	0.27	0.19	69.33	45.14	50.20	50.75	0.55	5.61	-18.58	7.43	6.07	6.79	6.87	0.08	0.81	-0.5
60	2.57	2.50	2.72	2.74	0.02	0.24	0.17	63.62	41.92	46.46	46.94	0.48	5.02	-16.68	6.86	5.59	6.25	6.32	0.07	0.72	-0.5
70	2.44	2.37	2.57	2.59	0.02	0.22	0.16	59.14	39.40	43.52	43.96	0.44	4.56	-15.18	6.40	5.22	5.82	5.88	0.06	0.66	-0.5
80	2.33	2.27	2.45	2.47	0.02	0.20	0.14	55.52	37.36	41.15	41.55	0.40	4.19	-13.97	6.03	4.92	5.47	5.53	0.06	0.61	-0.5
90	2.24	2.19	2.36	2.38	0.02	0.19	0.13	52.52	35.67	39.18	39.55	0.36	3.88	-12.97	5.72	4.67	5.18	5.23	0.05	0.56	-0.4
100	2.17	2.12	2.28	2.29	0.02	0.17	0.12	50.01	34.26	37.54	37.88	0.34	3.62	-12.13	5.45	4.46	4.94	4.99	0.05	0.52	-0.4
125	2.03	1.99	2.12	2.13	0.01	0.15	0.11	45.19	31.54	34.38	34.66	0.29	3.13	-10.52	4.95	4.06	4.47	4.51	0.04	0.45	-0.4
150	1.93	1.89	2.01	2.02	0.01	0.13	0.09	41.72	29.58	32.11	32.35	0.25	2.77	-9.37	4.58	3.76	4.13	4.17	0.04	0.40	-0.4
175	1.85	1.82	1.92	1.93	0.01	0.12	0.08	39.10	28.11	30.39	30.61	0.22	2.50	-8.50	4.31	3.54	3.87	3.91	0.03	0.36	-0.4
200	1.79	1.76	1.86	1.87	0.01	0.11	0.08	37.05	26.95	29.04	29.24	0.20	2.29	-7.81	4.09	3.37	3.67	3.70	0.03	0.33	-0.3

Receptor B_w

Distance From Road (m)	Annual Mean NH_3 (µg/m³)							Annual Mean NOx (µg/m³)							Annual Mean Total N Dep (kg N/ha/yr)						
	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-B
0	5.59	5.43	6.11	6.15	0.04	0.73	0.56	202.01	124.94	142.88	143.83	0.95	18.90	-58.18	17.75	14.82	16.81	16.92	0.11	2.10	-0.8
5	4.37	4.24	4.74	4.77	0.03	0.53	0.40	149.78	93.64	106.62	107.32	0.70	13.68	-42.46	13.66	11.31	12.80	12.88	0.08	1.57	-0.7
10	3.78	3.67	4.08	4.10	0.02	0.43	0.32	124.22	78.44	88.98	89.56	0.57	11.11	-34.66	11.61	9.56	10.80	10.87	0.07	1.31	-0.7
15	3.41	3.31	3.66	3.68	0.02	0.37	0.28	108.31	69.02	78.04	78.53	0.50	9.51	-29.78	10.30	8.46	9.54	9.60	0.06	1.14	-0.7
20	3.15	3.06	3.38	3.39	0.02	0.33	0.24	97.18	62.44	70.38	70.83	0.44	8.39	-26.35	9.37	7.68	8.64	8.69	0.05	1.02	-0.6
30	2.81	2.74	2.99	3.01	0.02	0.27	0.20	82.42	53.73	60.25	60.62	0.37	6.89	-21.80	8.12	6.63	7.44	7.48	0.05	0.85	-0.6
40	2.59	2.52	2.75	2.76	0.01	0.24	0.17	72.96	48.15	53.77	54.09	0.32	5.94	-18.87	7.29	5.96	6.66	6.70	0.04	0.74	-0.5
50	2.43	2.38	2.58	2.59	0.01	0.21	0.16	66.35	44.26	49.24	49.53	0.29	5.27	-16.82	6.71	5.48	6.11	6.15	0.04	0.67	-0.5
60	2.32	2.27	2.45	2.46	0.01	0.19	0.14	61.44	41.37	45.87	46.14	0.27	4.77	-15.30	6.27	5.12	5.70	5.73	0.03	0.61	-0.5
70	2.23	2.18	2.35	2.36	0.01	0.18	0.13	57.63	39.12	43.26	43.51	0.25	4.39	-14.12	5.93	4.85	5.38	5.41	0.03	0.56	-0.5
80	2.16	2.12	2.27	2.28	0.01	0.17	0.12	54.60	37.34	41.19	41.42	0.23	4.08	-13.18	5.66	4.62	5.12	5.15	0.03	0.53	-0.5
90	2.10	2.06	2.21	2.22	0.01	0.16	0.12	52.11	35.88	39.48	39.70	0.22	3.83	-12.41	5.43	4.44	4.91	4.94	0.03	0.50	-0.4
100	2.05	2.02	2.15	2.16	0.01	0.15	0.11	50.04	34.66	38.06	38.27	0.21	3.62	-11.77	5.24	4.29	4.74	4.77	0.03	0.47	-0.4
125	1.96	1.93	2.05	2.06	0.01	0.13	0.10	46.09	32.33	35.35	35.55	0.19	3.22	-10.55	4.88	4.00	4.40	4.43	0.03	0.43	-0.4
150	1.90	1.87	1.98	1.99	0.01	0.12	0.09	43.27	30.66	33.42	33.60	0.18	2.93	-9.68	4.62	3.79	4.16	4.18	0.02	0.39	-0.4
175	1.85	1.82	1.93	1.93	0.01	0.11	0.08	41.15	29.41	31.96	32.13	0.17	2.72	-9.02	4.42	3.63	3.98	4.00	0.02	0.36	-0.4
200	1.81	1.78	1.88	1.89	0.01	0.11	0.08	39.49	28.42	30.82	30.97	0.16	2.55	-8.51	4.26	3.51	3.83	3.86	0.02	0.35	-0.4

Receptor B_e

Distance From Road (m)	Annual Mean NH_3 (µg/m³)							Annual Mean NOx (µg/m³)							Annual Mean Total N Dep (kg N/ha/yr)						
	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)
0	6.27	6.09	6.89	6.93	0.04	0.83	0.66	231.28	142.62	163.32	164.41	1.09	21.79	-66.88	19.99	16.76	19.03	19.15	0.12	2.38	-0.85
5	4.95	4.81	5.40	5.43	0.03	0.62	0.48	174.62	108.66	123.98	124.80	0.82	16.14	-49.82	15.62	13.01	14.74	14.83	0.09	1.82	-0.79
10	4.25	4.14	4.62	4.64	0.03	0.51	0.39	144.67	90.80	103.27	103.94	0.67	13.14	-40.73	13.25	10.99	12.42	12.50	0.08	1.51	-0.75
15	3.81	3.70	4.12	4.14	0.02	0.43	0.33	125.45	79.36	89.99	90.57	0.58	11.21	-34.88	11.71	9.67	10.92	10.98	0.07	1.31	-0.72
20	3.49	3.39	3.76	3.78	0.02	0.38	0.29	111.73	71.20	80.52	81.03	0.51	9.83	-30.70	10.58	8.71	9.82	9.88	0.06	1.17	-0.70
30	3.05	2.98	3.27	3.29	0.02	0.31	0.23	93.09	60.12	67.66	68.08	0.42	7.96	-25.01	9.03	7.40	8.32	8.37	0.05	0.97	-0.66
40	2.77	2.70	2.95	2.97	0.01	0.27	0.20	80.90	52.88	59.26	59.62	0.36	6.74	-21.28	7.98	6.53	7.32	7.36	0.05	0.83	-0.62
50	2.57	2.51	2.73	2.74	0.01	0.23	0.17	72.24	47.74	53.29	53.61	0.32	5.87	-18.63	7.23	5.90	6.60	6.64	0.04	0.74	-0.59
60	2.42	2.36	2.56	2.57	0.01	0.21	0.15	65.73	43.88	48.80	49.09	0.29	5.21	-16.64	6.65	5.43	6.05	6.09	0.04	0.66	-0.56
70	2.30	2.25	2.43	2.44	0.01	0.19	0.14	60.65	40.87	45.31	45.57	0.26	4.70	-15.08	6.20	5.06	5.62	5.66	0.04	0.60	-0.54
80	2.20	2.16	2.32	2.33	0.01	0.17	0.13	56.58	38.46	42.51	42.75	0.24	4.29	-13.83	5.83	4.76	5.28	5.31	0.03	0.55	-0.52
90	2.13	2.08	2.23	2.24	0.01	0.16	0.12	53.24	36.48	40.21	40.44	0.23	3.95	-12.80	5.53	4.51	5.00	5.03	0.03	0.51	-0.50
100	2.06	2.02	2.16	2.17	0.01	0.15	0.11	50.45	34.83	38.29	38.50	0.22	3.67	-11.94	5.27	4.31	4.76	4.79	0.03	0.48	-0.49
125	1.94	1.90	2.02	2.03	0.01	0.13	0.09	45.16	31.71	34.66	34.85	0.19	3.14	-10.31	4.78	3.92	4.31	4.33	0.03	0.42	-0.45
150	1.85	1.82	1.93	1.93	0.01	0.12	0.08	41.85	29.94	32.53	32.70	0.17	2.76	-9.14	4.44	3.64	3.99	4.01	0.02	0.37	-0.43
175	1.79	1.76	1.86	1.86	0.01	0.11	0.08	39.12	28.33	30.66	30.82	0.16	2.49	-8.30	4.18	3.44	3.75	3.78	0.02	0.34	-0.41
200	1.74	1.71	1.80	1.81	0.01	0.10	0.07	37.04	27.11	29.24	29.39	0.15	2.28	-7.65	3.99	3.28	3.57	3.60	0.02	0.31	-0.39

Receptor C_w

Distance From Road (m)	Annual Mean NH_3 (µg/m³)							Annual Mean NOx (µg/m³)							Annual Mean Total N Dep (kg N/ha/yr)						
	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)
0	6.36	6.24	7.04	7.08	0.04	0.84	0.72	236.67	147.44	168.47	169.55	1.08	22.11	-67.11	20.34	17.22	19.50	19.62	0.12	2.40	-0.72
5	5.07	4.96	5.57	5.60	0.03	0.63	0.53	181.07	113.63	129.45	130.27	0.82	16.64	-50.80	16.05	13.50	15.26	15.35	0.09	1.85	-0.71
10	4.34	4.25	4.74	4.76	0.03	0.52	0.43	149.77	94.70	107.57	108.24	0.67	13.55	-41.53	13.59	11.36	12.83	12.90	0.08	1.54	-0.69
15	3.86	3.78	4.19	4.22	0.02	0.44	0.36	129.12	82.24	93.17	93.74	0.57	11.50	-35.38	11.94	9.93	11.20	11.26	0.07	1.33	-0.68
20	3.51	3.44	3.80	3.82	0.02	0.38	0.31	114.30	73.32	82.84	83.34	0.50	10.02	-30.96	10.73	8.89	10.01	10.07	0.06	1.18	-0.66
30	3.05	2.98	3.28	3.29	0.02	0.31	0.25	94.25	61.27	68.90	69.30	0.40	8.03	-24.95	9.06	7.47	8.38	8.43	0.05	0.96	-0.63
40	2.74	2.69	2.93	2.95	0.01	0.26	0.20	81.17	53.42	59.80	60.15	0.34	6.73	-21.02	7.94	6.52	7.30	7.34	0.04	0.82	-0.60
50	2.53	2.48	2.69	2.70	0.01	0.22	0.17	71.95	47.90	53.41	53.70	0.30	5.81	-18.24	7.14	5.85	6.53	6.57	0.04	0.71	-0.57
60	2.37	2.32	2.51	2.52	0.01	0.20	0.15	65.08	43.79	48.65	48.91	0.26	5.12	-16.17	6.53	5.35	5.96	5.99	0.03	0.64	-0.54
70	2.25	2.20	2.37	2.38	0.01	0.18	0.14	59.76	40.61	44.97	45.20	0.24	4.59	-14.56	6.06	4.96	5.50	5.53	0.03	0.57	-0.52
80	2.15	2.11	2.26	2.27	0.01	0.16	0.12	55.53	38.09	42.03	42.25	0.22	4.16	-13.28	5.67	4.65	5.14	5.17	0.03	0.52	-0.50
90	2.07	2.03	2.17	2.18	0.01	0.15	0.11	52.07	36.02	39.64	39.84	0.20	3.82	-12.23	5.36	4.39	4.85	4.87	0.03	0.48	-0.48
100	2.00	1.97	2.10	2.11	0.01	0.14	0.10	49.20	34.31	37.65	37.84	0.19	3.53	-11.36	5.10	4.18	4.60	4.63	0.03	0.45	-0.47
125	1.88	1.85	1.96	1.96	0.01	0.12	0.09	43.77	31.08	33.90	34.06	0.16	2.99	-9.70	4.59	3.77	4.14	4.16	0.02	0.39	-0.44
150	1.79	1.76	1.86	1.86	0.01	0.10	0.08	39.97	28.82	31.28	31.42	0.14	2.60	-8.55	4.24	3.49	3.81	3.83	0.02	0.34	-0.41
175	1.72	1.70	1.79	1.79	0.01	0.09	0.07	37.16	27.15	29.35	29.48	0.13	2.32	-7.69	3.98	3.28	3.56	3.58	0.02	0.30	-0.39
200	1.67	1.65	1.73	1.74	0.01	0.09	0.06	35.02	25.89	27.87	27.99	0.12	2.11	-7.03	3.77	3.12	3.38	3.40	0.02	0.28	-0.38

Receptor C_e

Distance From Road	Annual Mean NH_3 (µg/m³)							Annual Mean NOx (µg/m³)							Annual Mean Total N Dep (kg N/ha/yr)						
	BL Baselin	Proj BL Proj	DM (Base	DS (Scn1	(DS-	Change (DS-	(DS-	BL Baselin	Proj BL Proj	DM (Base	DS (Scn1	(DS-	Change (DS-	(DS-	BL Baselin	Proj BL Proj	DM (Base	DS (Scn1	(DS-	Change (DS-	(DS-BL)

(m)	e	Baseline	2033)	2033)	DM)	ProjBL)	BL)	e	Baseline	2033)	2033)	DM)	ProjBL)	BL)	e	Baseline	2033)	2033)	DM)	ProjBL)	
0	5.18	4.97	5.61	5.64	0.03	0.67	0.46	186.09	113.96	130.64	131.50	0.86	17.55	-54.59	16.44	13.53	15.39	15.48	0.10	1.95	-0.96
5	4.15	3.99	4.46	4.49	0.02	0.50	0.33	141.91	87.94	100.36	101.01	0.65	13.07	-40.91	12.97	10.59	12.01	12.09	0.07	1.50	-0.88
10	3.57	3.44	3.82	3.84	0.02	0.40	0.27	116.93	73.32	83.31	83.84	0.53	10.52	-33.09	10.94	8.89	10.06	10.12	0.06	1.23	-0.82
15	3.19	3.08	3.40	3.42	0.02	0.34	0.22	100.55	63.77	72.17	72.61	0.44	8.84	-27.94	9.59	7.76	8.76	8.82	0.05	1.05	-0.77
20	2.92	2.82	3.10	3.11	0.02	0.29	0.19	88.88	56.97	64.24	64.62	0.39	7.65	-24.25	8.60	6.95	7.83	7.87	0.05	0.92	-0.73
30	2.56	2.48	2.70	2.71	0.01	0.23	0.15	73.28	47.92	53.66	53.97	0.31	6.05	-19.31	7.25	5.85	6.56	6.60	0.04	0.74	-0.66
40	2.32	2.26	2.44	2.45	0.01	0.19	0.13	63.24	42.10	46.86	47.12	0.26	5.02	-16.11	6.36	5.14	5.73	5.76	0.03	0.63	-0.60
50	2.16	2.10	2.26	2.27	0.01	0.17	0.11	56.21	38.04	42.11	42.34	0.22	4.30	-13.88	5.73	4.63	5.15	5.18	0.03	0.54	-0.55
60	2.04	1.99	2.13	2.14	0.01	0.15	0.10	51.01	35.03	38.60	38.80	0.20	3.76	-12.22	5.26	4.26	4.71	4.74	0.03	0.48	-0.52
70	1.95	1.90	2.03	2.03	0.01	0.13	0.09	46.99	32.71	35.88	36.05	0.18	3.35	-10.93	4.89	3.97	4.37	4.40	0.02	0.43	-0.49
80	1.87	1.83	1.95	1.95	0.01	0.12	0.08	43.80	30.86	33.73	33.89	0.16	3.02	-9.91	4.59	3.74	4.10	4.12	0.02	0.39	-0.46
90	1.81	1.78	1.88	1.88	0.01	0.11	0.07	41.20	29.36	31.97	32.12	0.15	2.76	-9.08	4.35	3.55	3.88	3.90	0.02	0.36	-0.44
100	1.76	1.73	1.82	1.83	0.01	0.10	0.07	39.04	28.11	30.51	30.65	0.14	2.53	-8.39	4.14	3.39	3.70	3.72	0.02	0.33	-0.43
125	1.67	1.64	1.72	1.72	0.00	0.08	0.06	34.96	25.75	27.75	27.86	0.12	2.12	-7.09	3.75	3.09	3.35	3.36	0.02	0.28	-0.39
150	1.60	1.58	1.64	1.65	0.00	0.07	0.05	32.08	24.09	25.80	25.91	0.10	1.82	-6.17	3.48	2.88	3.10	3.12	0.01	0.24	-0.36
175	1.55	1.53	1.59	1.59	0.00	0.06	0.05	29.94	22.84	24.35	24.45	0.09	1.60	-5.49	3.27	2.72	2.92	2.93	0.01	0.21	-0.34
200	1.51	1.49	1.55	1.55	0.00	0.06	0.04	28.28	21.88	23.23	23.32	0.08	1.43	-4.97	3.11	2.59	2.77	2.78	0.01	0.19	-0.33

Receptor D

Distance From Road (m)	Annual Mean NH_3 (µg/m^3)							Annual Mean NOx (µg/m^3)							Annual Mean Total N Dep (kg N/ha/yr)						
	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)	BL Baseline	Proj BL Proj Baseline	DM (Base 2033)	DS (Scn1 2033)	(DS-DM)	Change (DS-ProjBL)	(DS-BL)
0	6.88	6.62	7.51	7.58	0.07	0.96	0.71	200.58	120.10	137.05	138.42	1.37	18.32	-62.16	20.14	16.95	19.30	19.49	0.19	2.54	-0.65
5	5.68	5.48	6.18	6.24	0.06	0.76	0.55	162.48	98.39	111.88	112.96	1.08	14.57	-49.52	16.56	13.87	15.76	15.92	0.15	2.05	-0.64
10	4.96	4.79	5.37	5.42	0.05	0.64	0.46	139.39	85.27	96.65	97.56	0.91	12.29	-41.83	14.36	11.98	13.59	13.72	0.13	1.75	-0.64
15	4.46	4.31	4.82	4.86	0.04	0.55	0.40	123.36	76.18	86.09	86.88	0.79	10.70	-36.48	12.81	10.65	12.07	12.18	0.11	1.53	-0.63
20	4.09	3.95	4.40	4.44	0.04	0.49	0.35	111.51	69.46	78.29	78.99	0.70	9.53	-32.52	11.65	9.66	10.93	11.04	0.10	1.37	-0.62
30	3.57	3.45	3.83	3.86	0.03	0.40	0.29	94.90	60.06	67.37	67.95	0.58	7.88	-26.96	10.01	8.26	9.33	9.41	0.08	1.15	-0.59
40	3.22	3.12	3.44	3.46	0.03	0.34	0.25	83.73	53.74	60.03	60.52	0.49	6.78	-23.21	8.88	7.32	8.23	8.31	0.07	0.99	-0.57
50	2.97	2.88	3.16	3.18	0.02	0.30	0.22	75.65	49.18	54.72	55.16	0.43	5.98	-20.50	8.05	6.63	7.44	7.50	0.06	0.88	-0.55
60	2.77	2.70	2.95	2.97	0.02	0.27	0.19	69.53	45.73	50.71	51.10	0.39	5.37	-18.44	7.42	6.10	6.83	6.89	0.06	0.79	-0.53
70	2.62	2.55	2.78	2.80	0.02	0.25	0.17	64.72	43.01	47.55	47.90	0.35	4.89	-16.82	6.92	5.69	6.35	6.40	0.05	0.72	-0.51
80	2.50	2.44	2.64	2.66	0.02	0.22	0.16	60.84	40.82	45.01	45.33	0.32	4.51	-15.51	6.51	5.35	5.96	6.01	0.05	0.66	-0.50
90	2.40	2.34	2.53	2.55	0.02	0.21	0.15	57.64	39.02	42.91	43.21	0.30	4.19	-14.43	6.17	5.07	5.64	5.69	0.04	0.62	-0.48
100	2.32	2.26	2.44	2.46	0.01	0.19	0.14	54.96	37.51	41.16	41.43	0.28	3.92	-13.53	5.89	4.84	5.37	5.42	0.04	0.58	-0.47
125	2.16	2.11	2.26	2.28	0.01	0.17	0.12	49.84	34.62	37.80	38.04	0.24	3.41	-11.80	5.34	4.39	4.86	4.89	0.04	0.50	-0.44
150	2.04	2.00	2.14	2.15	0.01	0.15	0.11	46.20	32.58	35.42	35.63	0.21	3.05	-10.57	4.94	4.08	4.49	4.52	0.03	0.45	-0.42
175	1.96	1.92	2.04	2.05	0.01	0.13	0.10	43.49	31.05	33.65	33.84	0.19	2.78	-9.65	4.65	3.84	4.21	4.24	0.03	0.40	-0.41
200	1.89	1.86	1.97	1.98	0.01	0.12	0.09	41.40	29.88	32.28	32.46	0.18	2.58	-8.94	4.42	3.65	4.00	4.03	0.03	0.37	-0.39

Appendix 10 Matrix Appropriate Assessment

This table summarises the DMP's policies, what they are trying to achieve, the potential pathways of adverse effects on the Natura 2000 sites within 15km of Reigate & Banstead Borough Council boundary and whether following Appropriate Assessment there are any likely significant of adverse effects as a result of the DMP.

DMP Policy Approach	Aim	Pathways of adverse effect	Assessment Conclusion
EMP1 Principal Employment Areas	Spatial policy designating employment sites	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC Bechstein's bats' 'functional linkage' to MGRE SAC	No adverse effect in relation to air pollution (in-combination) No likely significant effect in relation to Bechstein's bats' 'functional linkage'
EMP2: Local Employment Areas	Spatial policy designating employment sites	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC Bechstein's bats' 'functional linkage' to MGRE SAC	No adverse effect in relation to air pollution (in-combination) No likely significant effect in relation to Bechstein's bats' 'functional linkage'
EMP3: Employment Development Outside Employment Areas	Spatial policy designating employment sites	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)
EMP4: Safeguarding employment land and premises	A spatial policy designating employment sites	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)
EMP5: Local skills and training opportunities	Criteria based policy for employment opportunities	None	No Likely Significant Effects
RET1: Development within identified retail frontages and local centres	Spatial policy promoting retail	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)

RET2: Town centre frontages	Criteria based policy promoting retail	None	No Likely Significant Effects
RET3: Local Centres	Spatial policy promoting retail	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)
RET4: Development within identified retail frontages and local centres	Spatial policy promoting retail	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)
RET5: Development of town centre uses outside town and local centres	Spatial policy promoting retail	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)
RET6:Retail Warehousing	Spatial policy promoting retail warehouses	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)
DES1: Design of new development	Criteria based policy promoting design	None	No Likely Significant Effects
DES2: Residential garden land development	Criteria based policy promoting design.	None	No Likely Significant Effects
DES3: Residential Areas of Special Character	Criteria based policy promoting design in neighbourhoods.	None	No Likely Significant Effects
DES4: Housing mix	Criteria based policy sets out local requirements to ensure satisfactory housing mix	None	No Likely Significant Effects
DES5: delivering high quality homes	Criteria based policy promoting design in housing.	None	No Likely Significant Effects
DES6: Affordable Housing	Criteria based policy sets out local requirements to ensure affordable housing	None	No Likely Significant Effects

DES7: Specialist Accommodation	Criteria/spatial based policy to provide specialist accommodation	None	No Likely Significant Effects
DES8: Construction management	Criteria based policy based on construction management	None	No Likely Significant Effects
DES9: Pollution and contaminated land	Criteria based policy to safeguard air and land quality	None	No Likely Significant Effects
DES10: Advertisement & shop front design	Criteria based policy promoting design of shop fronts	None	No Likely Significant Effects
OSR1: Urban open space	Spatial policy promoting open space	None	No Likely Significant Effects
OSR2: Open space in new developments	Spatial policy promoting open space	None	No Likely Significant Effects
OSR3: Outdoor sport and recreation	Spatial policy promoting recreational space	Bechstein's bats' 'functional linkage' to MGRE SAC	No adverse effect in relation to Bechstein's Bat 'functional linkage to MGRE SAC
TAP1: Access, parking and services	Criteria based policy regarding parking and services	None	No Likely Significant Effects
TAP2: Airport car parking	Spatial policy prohibiting additional airport parking	None	No Likely Significant Effects
CCF1: Climate Change	Criteria policy for adapting to and mitigating for climate change	None	No Likely Significant Effects
CCF2: Flood Risk	Spatial/Criteria policy for adapting to and mitigating for flood risk	None	No Likely Significant Effects

NHE1: Landscape Protection	Spatial policy protecting The Surrey Hills Area of Outstanding Natural Beauty (AONB) The Area of Great Landscape Value (AGLV	None	No Likely Significant Effects
NHE2: Protecting and enhancing biodiversity and areas of geographical importance	Spatial policy for protecting sites designated for biodiversity conservation	None	No Likely Significant Effects
NHE3: Protecting trees, woodland areas and natural habitats	Spatial/Criteria based policy protecting environment.	None	No Likely Significant Effects
NHE4: Green / Blue Infrastructure	Spatial environmental policy promoting green/blue infrastructure	None	No Likely Significant Effects
NHE5: Development within the Green Belt	Spatial policy small scale development opportunities in the Green Belt	None	No Likely Significant Effects
NHE6: Reuse and adaptation of buildings in the Green Belt and Rural Surrounds of Horley	Spatial policy small scale development opportunities in the Green Belt.	None	No Likely Significant Effects
NHE7: Rural Surrounds of Horley	Spatial policy to promote small scale development which protects the countryside	None	No Likely Significant Effects
NHE8: Horse keeping and equestrian development	Criteria based policy to promote small scale equestrian development	None	No Likely Significant Effects
NHE9: Heritage Assets	Criteria based policy promoting protection of heritage assets	None	No Likely Significant Effects
GTT1: Gypsy, Traveller and Travelling Showpeople Accommodation	Spatial policy to accommodate Gypsy, Traveller and Travelling Showpeople pitches	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)

CEM1 Cemetery and crematorium provision:	Policy to promote cemetery and crematorium provision.	None	No Likely Significant Effects
Section 3A: Area 1 - the North Downs	Banstead Village Centre site allocation; Urban area site allocation; Opportunity site	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)
Section 3B: Area 2a - Wealden Greensand Ridge - Redhill and Merstham	Redhill Town Centre site allocations; urban area site allocations; Site allocations beyond the current urban area	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination) No likely significant effect in relation to Bechstein's bats' 'functional linkage'
Section 3C: Area 2b - Wealden Greensand Ridge - Reigate	Reigate Town Centre site allocation; Opportunity Sites; Site allocations beyond the current urban area	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination) No likely significant effect in relation to Bechstein's bats' 'functional linkage'
Section 3D: Area 3 - The Low Weald	Horley Town Centre site allocations; Urban area site allocations; Opportunity Sites; Site allocations beyond the current urban area; Strategic employment site allocation	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)
INF1: Infrastructure	Spatial policy seeks to secure infrastructure to support new development.	Air pollution (in-combination) to MGRE SAC, THB SPA, WC SAC	No adverse effect in relation to air pollution (in-combination)
INF2: Community facilities	Spatial/criteria based policy to promote and protect community facilities	None	No Likely Significant Effects
INF3: Electronic Communication Networks	Criteria based policy promoting electronic communication networks	None	No Likely Significant Effects

MLS1: Phasing of urban extension sites:	Spatial/criteria policy phasing development	None	No Likely Significant Effects
MLS2: Safeguarding land for development beyond the plan period	Spatial policy to safeguard and, in Green Belt for development	None – at this stage	No Likely Significant Effects