Spelthorne Borough Council

LOCAL PLAN HRA PRE-SCREENING INFORMATION

001
JANUARY 2021

CONFIDENTIAL

Spelthorne Borough Council

LOCAL PLAN HRA PRE-SCREENING INFORMATION

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 7077159

OUR REF. NO. 001

DATE: JANUARY 2021

Spelthorne Borough Council

LOCAL PLAN HRA PRE-SCREENING INFORMATION

WSP

Mountbatten House
Basing View
Basingstoke, Hampshire
RG21 4HJ

Phone: +44 1256 318 800

Fax: +44 1256 318 700

WSP.com

QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	First Issue			
Date	January 2021			
Prepared by	Joanna Rochfort and Owen Peat			
Signature	Peat, Owen (UKODP001) 2021.01.28 15:20:13			
Checked by	Verity Dickie			
Signature	 Dickie, Verity (UKVXD007) 2021.01.28 15:30:28			
Authorised by	Adrian Hutchings			
Signature	 Hutchings, Adrian (UKARH003) I am approving this document 2021.01.28 15:28:16 Z			
Project number	70077159			
Report number	001			
File reference	\\uk.wspgroup.com\Central Data\Projects\70077xxx\70077159 - Spelthorne Local Plan, Air Quality Input\01 WIP\AQ Air Quality\09 Report			

CONTENTS

TABLES

FIGURES

APPENDICES

APPENDIX A

CEJU RULINGS

APPENDIX B

EUROPEAN SITES DETAILS, INCLUDING QUALIFYING FEATURES AND CONSERVATION OBJECTIVES

APPENDIX C

APIS INFORMATION FOR SPAS

APPENDIX D

APIS INFORMATION FOR SACS

APPENDIX E

BACKGROUND CONCENTRATIONS OF NOX

1 INTRODUCTION

1.1.1. This review is a preliminary step in the Habitats Regulations Assessment (HRA) process of the emerging Local Plan (LP) for Spelthorne Borough Council (SBC). The focus of the HRA process is on the potential for adverse effects as a result of the LP policies on the integrity of European nature conservation sites. These sites are referred to as European sites in this report hereafter, however also align with the definition of "Habitats sites" used in the National Planning Policy Framework (NPPF, 2019))[1].

1.1.2. European sites comprise Special Areas of Conservation (SACs), Special Protection Areas (SPAs), and Ramsar sites and, based on the precautionary principle, potential SACs (pSAC), candidate SACs (cSAC) and potential SPAs (pSPA)[2].

1.1.3. Under the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended) ('The Habitats Regulations') a duty is placed upon 'Competent Authorities' to consider the potential for effects upon sites of European importance identified by the Regulations, prior to granting consent for projects or plans. Should likely significant effects be identified by the initial screening process it is necessary to further consider the effects by way of an 'Appropriate Assessment'. Overall this process of assessment is known as HRA and further details of the applicable legislative context are summarised within Section 3.1.

1.1.4. Following the UK's exit from the EU, The Conservation of Habitats and Species Regulations 2017 were amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. As advised by national governments in the UK, the Habitats Regulations remain in force, including the general provisions for the protection of European sites and the procedural requirements to undertake HRA to assess the implications of plans or projects for European sites. The changes made were only those necessary to ensure that they remain operable now that the UK has left the EU.

1.1.5. SBC's emerging Local Plan is in an early stage of development and, as such, it is appropriate to undertake this initial review in advance of a formal HRA screening exercise to assist the process, with a particular focus on the location of potential site allocations and associated constraints and opportunities associated with these in relation to European sites. The information captured in this exercise will form part of the evidence base for the subsequent HRA stages (Stage 1 screening and, if necessary, a Stage 2 Appropriate Assessment (AA) (see Methodology Section 3).

1.1.6. This report provides the findings from a desk-based review of relevant information, including biodiversity information, any relevant traffic data, air quality modelling, previous HRA reporting or

[1] Ministry of Housing, Communities and Local Government, 2019. *National Planning Policy Framework.* Available at www.gov.uk/government/publications

[2] Definitions: SAC/SPA– adopted and formally designated; pSPA – approved by the Government and in the process of being classified; cSAC – sites approved by the Government and submitted to the Commission before the end of the Transition Period following the UK's exit from the EU, but not yet formally designated, pSAC – approved by the Government and in the process of being classified

any other studies which could inform subsequent HRAs. The report also identifies relevant European sites where likely significant effects could occur, particularly in relation to air quality changes and recreation pressures associated with the anticipated LP policies. This exercise includes the identification of all European sites which fall within 200m of a road and which have sensitivity to changes in nitrogen oxide (NO_X) and ammonia (NH_3) concentrations and Nutrient Nitrogen deposition (NDep) and/or where source-effects pathways are identified. As part of this work, a review of the Air Pollution Information Service (APIS) and the identification of Critical Levels and relevant Critical Loads for the potential pollution sources for the identified European sites has been undertaken.

2 SBC'S GROWTH STRATEGY

2.1.1. At this stage, SBC's emerging LP is very much still under development. Notably, the growth strategy and associated proposed site allocations are still under review. SBC has provided an indicative list of site allocations and approaches to meeting the housing needs of the Borough. These have been used as the basis for this pre-screening report and assume:

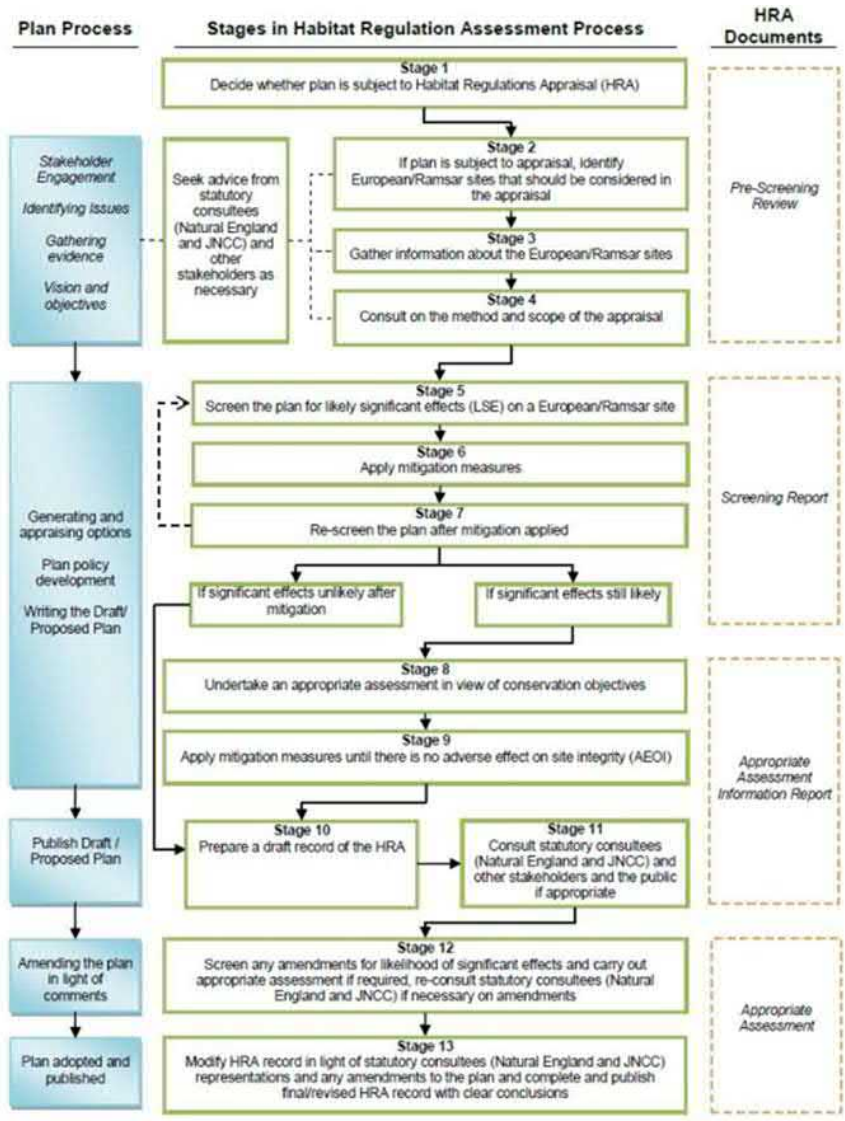
- Dispersal of development across the Borough as shown on supplied plans; and
- Delivery of 606 dwellings per annum.

2.1.2. Whilst the above reflects the growth strategy at the time of writing, it is understood that other options being considered comprise focusing development on brownfield sites/key growth areas (notably around Staines-upon-Thames). At a high level, a focus on development in the north and west of the Borough will locate development closer to the majority of identified European sites than an approach which disperses delivery across the Borough.

3 REVIEW METHODOLOGY

3.1.1. The review methodology broadly follows the guidance for HRA pre-screening exercises (Tyldesley, 2013[3]; Scottish Natural Heritage, 2015[4]). It is important to note that this review constitutes a scoping exercise for the HRA screening stage by covering stages 1 to 4 in the appraisal process as set out in Figure 1, also referred to as "pre-screening".

Figure 1 - Screening and Appropriate Assessment Stages in the HRA process (after SNH, 2015)



[3] Tyldesley, D. and Chapman, C. (2013) The Habitats Regulations Assessment Handbook UK DTA Publications Ltd.
[4] Scottish Natural Heritage (January 2015) Habitats Regulations Appraisal of Plans Guidance For Plan-Making Bodies In Scotland Version 3.0 originally prepared by David Tyldesley And Associates.

3.1.2. The first part of the review is to establish whether SBC's emerging LP should be subject to HRA. In this respect the review process is considered to consist of a series of five sequential questions (after Scottish Natural Heritage, 2015):

3.1.3. The second part comprises the information gathering stage and in particular the identification of European sites which will likely require consideration and on which background information is collated. This information includes the qualifying features of these sites, the conservation objectives and the sensitivities of those sites.

REVIEW CONTRIBUTION TO HRA BASELINE

3.1.4. The final element of the information gathering stage is to review the availability of relevant data sets and sources which will form the evidence base of the assessment of the LP Objectives alone and in-combination with other relevant plans and projects.

3.1.5. It is not considered appropriate at this early stage in the LP development process to consult on the method and scope of the appraisal (Stage 4 in Figure 1) from statutory consultees or other stakeholders.

3.1.6. The information collated in the above steps will be used throughout the HRA process and therefore this exercise comprises a useful database of primary HRA information.

3.1 LEGISLATIVE CONTEXT

3.1.1. The 'Habitats Directive' (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) protected habitats and species of European sites. Together with the 'Birds Directive' (Council Directive 2009/147/EC on the Conservation of Wild Birds), the Habitats Directive established a network of internationally important sites designated for their ecological status. SACs and Sites of Conservation Interest (SCI) were designated under the Habitats Directive and promote the protection of flora, fauna and habitats. SPAs were designated under the Birds Directive in order to protect vulnerable and migratory birds. These sites combined to create a Europe-wide 'Natura 2000' network of designated sites, referred to as 'European sites'.

3.1.2. Defra guidance (2021)[5] states that *SACs and Special Protection Areas (SPAs) in the UK no longer form part of the EU's Natura 2000 ecological network. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 have created a national site network on land and at sea, including both the inshore and offshore marine areas in the UK. The national site network includes:*

- *existing SACs and SPAs*
- *new SACs and SPAs designated under these Regulations.*

3.1.3. Any references to Natura 2000 in the 2017 Regulations and in guidance now refers to the new national site network.

[5] Department for Environment Food & Rural Affairs (2021). Changes to the Habitats Regulations 2017. Available at: https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017.

3.1.4. Maintaining a coherent network of protected sites with overarching conservation objectives is still required in order to:

- *fulfil the commitment made by government to maintain environmental protections*
- *continue to meet our international legal obligations, such as the Bern Convention, the Oslo and Paris Conventions (OSPAR), Bonn and Ramsar Conventions*

3.1.5. In the United Kingdom, the Habitats Regulations incorporate all SPAs into the definition of European sites and, consequently, the protections afforded to European sites under the Habitats Directive apply to SPAs designated under the Birds Directive.

3.1.6. Regulation 63 of the Habitats Regulations defines the procedure for the assessment of the implications of plans or projects on European sites. Under this Regulation, if a proposed development is unconnected with site management and is likely to significantly affect the designated site, the competent authority must undertake an 'Appropriate Assessment'.

3.1.7. According to the Habitats Regulations *the competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be).*

3.1.8. Regulation 63 (1) of the Habitats Regulations states that '…a *competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—*

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of that site,

—must make an appropriate assessment of the implications for that site in view of that site's conservation objectives.'

3.1.9. The Habitats Regulations make allowance for projects or plans to be completed if they satisfy 'imperative reasons of overriding public interest'[6]. Regulation 64 relates to such situations.

3.1.10. There are a number of recent Court of Justice of the European Union (CJEU) rulings which are relevant to this HRA and these are given in Appendix A for information. As the general provisions for the protection of European sites and the procedural requirements to undertake Habitats Regulations Appraisal (HRA) to assess the implications of plans or projects for European sites remain, this previous case law established prior to the UK's exit from the EU is considered to apply unless superseded by the judgement of an appropriate UK court.

[6] '*(a) reasons relating to human health, public safety or beneficial consequences of primary importance to the environment; or. (b) any other reasons which the competent authority, having due regard to the opinion of the Commission, consider to be imperative reasons of overriding public interest.'*

4 REVIEW RESULTS

4.1 IS HRA REQUIRED?

4.1.1. The review looked to specifically answer each of the questions set out in the HRA review methodology. It should be noted that the level of detail of the LP available at the time of this review only allows for an anticipated assessment of the need for HRA based on experience of similar plans and projects (see Table 4-1 below).

Table 4-1 – Is HRA required?

	Question	Response
1	Is the whole of the plan directly connected with or necessary to the management of a European site for nature conservation purposes?	No
2	Is the plan a 'strategic development plan' or 'local development plan' or 'supplementary guidance' or a core path plan or a revision thereof?	Yes
3	Does the plan provide a framework for deciding applications for project consents and / or does it influence decision makers on the outcome of applications for project consents?	Yes
4	Does the plan contain a programme, or policies, or proposals which could affect one or more particular European site?	Yes
5	Is the plan a general statement of policy showing only the general political will or intention of the plan-making body, and no effect on any particular European site can reasonably be predicted?	No

4.1.2. When the answer to either questions (1) or (5) is 'no', but the answer to any of questions (2), (3) or (4) is 'yes', then the requirement for further HRA is identified.

4.1.3. In this case, the answers to questions (1) and (5) are both 'no', while the answers to questions (2) to (4) are all 'yes'. It is therefore confirmed based on the availability of current information that SBC's emerging LP does therefore require HRA.

5 REVIEW OF EUROPEAN SITES

5.1.1. The following section provides a summary of the results of the review of European sites data which will form the baseline for subsequent stages of HRA.

5.2 EUROPEAN SITES

5.2.1. It is necessary to consider all the European sites that form part of the national site network (SACs, SPAs and proposed or candidate SPAs or SACs) within a broad area or Zone of Influence (ZoI) of SBC's emerging LP and associated proposed site allocations. The ZoI is defined by the potential effects arising from the project or plan and the available pathways for those effects to reach and impact the interest features of European sites.

5.2.2. In order to identify all strategic corridors where potential direct, indirect and in-combination effects could reasonably be considered possible, an initial buffer of 10km around SBC's administrative boundary was applied[7].

5.2.3. Five European sites, presented in Table 5-1, lie within the potential ZoI for SBC's emerging LP, including two SPA's, and three SAC's located within 10km (see Figure 2). One Ramsar site falls within these site designations, for the South West London Waterbodies and by convention these international wetland sites are included within the HRA process. Other site designations of national or local importance are not assessed by the HRA process but in some cases these designations will overlap with European or Ramsar sites.

5.2.4. Wimbledon Common SAC is located within 10km of the SBC boundary (in its south-eastern extent), but not within 10km of any of the proposed site allocations (see Figure 3). It is therefore not included in detail in this review but background information has been provided.

5.2.5. The 10km ZoI has been adopted as a suitable screening distance at this stage of the HRA process. In subsequent HRA stages it may be appropriate to vary this ZoI to account for factors relevant to each site (such as supporting wide-ranging species) and identified pressures or threats, such as journeys likely to be made by additional residents.

[7] Taken from the National Travel Survey.

Table 5-1 – Proximity of proposed site allocations to European Sites within 10km of SBC's administrative boundary

Site ID	Address	Settlement	Area (ha)	Distance of habitats sites within 10km (km)[8]					Total no. habitats sites within 10km
				South West London Water Bodies SPA & Ramsar	Thames Basin Heaths SPA	Thursley, Ash, Pirbright & Chobham SAC	Windsor Forest & Great Park SAC	Richmond Park SAC	
AE1/003	Ashford Manor Golf Club, Fordbridge Road	Ashford	0.24	1.6	9.7	9.7	8.2		4
AE1/003	Ashford Manor Golf Club, Fordbridge Road	Ashford	0.32	1.6	9.7	9.7	8.3		4
AE3/006	158-166, Feltham Road	Ashford	1.32	2.4			9.8		2
AE3/009	Land at Chattern Hill, Chattern Hill	Ashford	1.66	2.1			9.5		2
AS1/003	Staines Fire Station, Town Lane	Stanwell	0.33	0.0			7.5		2
AS2/005	Land west of, Edward Way	Ashford	1.87	0.6			8.2		2
AT1/001	Hitchcock and King, Stanwell Road	Ashford	1.54	0.7			7.9		2
AT1/002	Ashford Sports Club, Woodthorpe Road	Ashford	1.15	0.7	9.7	9.7	7.5		4
AT3/007	Ashford Multi-storey car park, Church Road	Ashford	0.20	1.3			8.4		2

[8] Where the European site lies outside of 10km from the listed site allocation, no value is shown.

Site ID	Address	Settlement	Area (ha)	Distance of habitats sites within 10km (km)[8]					Total no. habitats sites within 10km
				South West London Water Bodies SPA & Ramsar	Thames Basin Heaths SPA	Thursley, Ash, Pirbright & Chobham SAC	Windsor Forest & Great Park SAC	Richmond Park SAC	
AT3/009	Ashford Telephone Exchange, Church Road	Ashford	0.26	1.3			8.5		2
HS1/002	Land at Croysdale Avenue, Croysdale Avenue	Shepperton	1.68	1.5	9.5			9.1	3
HS1/010	Land to S and W Stratton Road, Stratton Road	Sunbury	7.55	1.8	9.7			9.2	3
HS1/012	Land East of Upper Halliford, Nursery Road	Shepperton	1.60	2.4	9.8			9.6	3
HS2/004	Land South of Nursery Road, Nursery Road	Sunbury	0.66	2.5				9.6	3
LS1/006	Land at Windmill Close, Windmill Close	Sunbury	0.92	2.6				9.6	3
LS1/007	Land to South of Ashford Common Water Treatment Works, Charlton Road	Shepperton	5.10	3.2	9.8				2
LS1/020	Land south/west of Charlton Road, Charlton Road	Shepperton	3.01	3.3	9.3	9.5			3
RL1/007	Land off Worple Road, Worple Road	Staines	6.52	1.9	7.7	7.7	6.7		4
RL1/010	Part of Greenfield Recreation Ground, Berryscroft Road and Bingham Drive	Laleham	3.00	1.9	8.2	8.2	7.2		4
RL1/011	Land at Staines and Laleham Sports Club, Worple Road	Staines	6.03	2.0	7.5	7.5	6.7		4

Site ID	Address	Settlement	Area (ha)	Distance of habitats sites within 10km (km)[8]					Total no. habitats sites within 10km
				South West London Water Bodies SPA & Ramsar	Thames Basin Heaths SPA	Thursley, Ash, Pirbright & Chobham SAC	Windsor Forest & Great Park SAC	Richmond Park SAC	
SC1/002	115, Staines Road West	Sunbury	0.11	2.0				9.0	2
SC1/003	147, Staines Road West	Sunbury	0.08	2.1				9.1	2
SC1/004	Sunbury Fire Station, Staines Road West	Sunbury	0.31	2.0				9.0	2
SC1/005	Sunbury Cross Ex Services Association Club, Crossways	Sunbury	0.30	2.0				9.0	2
SC1/013	RMG Warehouse & Delivery Office, 47-79, Staines Road West	Sunbury	0.25	1.8				8.8	2
SE1/003	77, Staines Road East	Sunbury	0.75	1.2				8.3	2
SE1/008	Telephone Exchange, Green Street	Sunbury	0.25	1.8				8.9	2
SE1/019	Sunbury Social Services Centre, 108 Vicarage Road	Sunbury	0.23	1.6				8.6	2
SE1/020	Sunbury Adult Education Centre, The Avenue	Sunbury	0.43	1.2				8.2	2
SE1/024	Annandale House, 1, Hanworth Road	Sunbury	0.97	1.5				8.5	2
SH1/005	Staines Road Farm (Eastern Site), Laleham Road	Shepperton	4.96	3.2	8.2	8.9			3

Site ID	Address	Settlement	Area (ha)	Distance of habitats sites within 10km (km)[8]					Total no. habitats sites within 10km
				South West London Water Bodies SPA & Ramsar	Thames Basin Heaths SPA	Thursley, Ash, Pirbright & Chobham SAC	Windsor Forest & Great Park SAC	Richmond Park SAC	
SH1/015	Shepperton Youth Centre, Laleham Road	Shepperton	0.31	3.6	8.1	8.9			3
SH2/003	Shepperton Delivery Office, 47, High Street	Shepperton	0.17	3.3	7.8	9.0			3
SN1/005	Land at Northumberland Close, Northumberland Close	Stanwell	1.75	0.9			8.0		2
SN1/006	Land to the west of Long Lane and South of Blackburn Trading Estate, Long Lane	Stanwell	4.83	0.8			8.0		2
SN1/012	Stanwell Bedsits, De Havilland Way	Stanwell	2.19	0.6			7.7		2
SN1/015	Land to the west of Town Lane, Town Lane	Stanwell	0.65	0.0			7.1		2
SS1/002	White House, Kingston Road	Ashford	0.26	1.8	9.1	9.1	7.9		4
ST1/028	Leacroft Centre, Leacroft	Staines	0.15	0.6	8.7	8.7	6.1		4
ST1/029	Surrey CC Buildings, Burges Way	Staines	0.47	1.2	8.0	8.0	6.0		4
ST1/030	Fairways Day Centre, Knowle Green	Staines	0.66	1.1	8.1	8.1	5.9		4
ST1/031	Thameside Arts Centre, Wyatt Road	Staines	0.26	1.2	8.0	8.0	5.7		4

Site ID	Address	Settlement	Area (ha)	Distance of habitats sites within 10km (km)[8]					Total no. habitats sites within 10km
				South West London Water Bodies SPA & Ramsar	Thames Basin Heaths SPA	Thursley, Ash, Pirbright & Chobham SAC	Windsor Forest & Great Park SAC	Richmond Park SAC	
ST1/037	Thameside House, South Street	Staines	0.24	1.0	8.0	8.0	5.3		4
ST2/006	Builders Yard, Gresham Road	Staines	1.36	0.8	8.1	8.1	5.5		4
ST3/004	34-36 (OAST House) /Car park, Kingston Road	Staines	0.92	0.6	8.3	8.3	5.6		4
ST3/012	Staines Telephone Exchange, Fairfield Avenue	Staines	0.59	0.4	8.4	8.4	5.4		4
ST4/001	Jewsons, Moor Lane	Staines	0.58	0.5	8.1	8.1	4.8		4
ST4/002	Car Park, Hanover House & Sea Cadet Building, Bridge Street	Staines	0.92	0.8	7.8	7.8	4.8		4
ST4/004	96-104, Church Street	Staines	0.88	0.7	7.8	7.8	4.7		4
ST4/009	The Elmsleigh Centre and adjoining land, South Street	Staines	6.34	0.7	7.9	7.9	5.2		4
ST4/010	Riverside Surface Carpark, Thames Street	Staines	0.25	0.9	7.9	7.9	5.2		4
ST4/011	Thames Lodge, Thames Street	Staines	0.36	1.0	7.9	7.9	5.2		4
ST4/019	Debenhams site, 35-45, High Street	Staines	0.26	0.8	7.9	7.9	5.2		4

5.2.6. Information summarising the vulnerabilities of each European site is given in Table 5-2. The reasons for designation of these sites and their known vulnerabilities are also summarised in Appendix B, which has been collated from the Natura 2000 standard data forms (JNCC, 2016) and Site Improvement Plans (Natural England (NE) (NE, 2014).

5.2.7. With regard for the qualifying features and information on vulnerability of the sites detailed in Appendix B, the broad conservation objectives for SACs and SPAs are to:

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

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

5.2.8. Specific conservation objectives for Ramsar sites are not currently available, however a summary of the value of each site, current management and proposed measures are listed within the appropriate Information Sheet on Ramsar Wetlands (RIS).

Table 5-2 - Pressures and threats listed on European sites SIPs[9]

Impacts shaded as red should be given primary consideration in screening and appropriate assessment of SBC's emerging LP and those shaded green are unlikely to be considerations in screening and appropriate assessment of the emerging LP.

Site Name	Air pollution: impact of atmospheric nitrogen deposition	Hydrological changes	Public access/ disturbance	Habitat fragmentation	Inappropriate Management	Invasive species	Changes in species distribution	Disease	Fisheries : Fish stocking	Military	Forestry and woodland management	Natural Changes to site conditions	Undergrazing	Wildfire/ arson
Thames Basin Heaths SPA	P/T	T	P/T	P	P – scrub control	P/T				T	P		P	P
Thursley, Ash, Pirbright and Chobham SAC[10]	P/T	T	P/T	P	P – scrub control	P/T				T	P		P	P
Richmond Park SAC	No current issues affecting the European site feature(s) have been identified on this site													
South West London Waterbodies SPA			P/T		T – weed control	P/T	P/T		P			P/T		
Wimbledon Common SAC	Site is outside the ZoI of the proposed site allocations													
Windsor Forest & Great Park SAC	P					T		T			P/T			

[9] P = Pressure, T = Threat

[10] The Thames Basin Heaths SPA and Thursley, Ash, Pirbright and Chobham SAC overlap and share a SIP.

5.2.9. The pressures and threats set out in Table 5-2 have been reviewed for those likely to arise from the proposed delivery of dwellings within the Borough. Those considered relevant to this type and scale of development include:

- air pollution: impact of atmospheric nitrogen deposition; and
- public access/ disturbance.

5.2.10. The pressures and threats set out in Table 5-2 which are considered at this early stage to be unlikely to arise from the draft development allocation scenario (except where this directly results secondarily from the pressures and threats included above) and are not considered further in this review, are: hydrological changes; habitat fragmentation; inappropriate management; invasive species; changes in species distribution; disease; fisheries: fish stocking; military; forestry and woodland management; natural changes to site conditions; under grazing; wildfire/ arson (as separate to public access/ disturbance).

5.2.11. Further information relating to those pressures and threats identified as relevant to the draft development allocation scenario are presented below.

5.3 POTENTIAL AIR QUALITY EFFECTS

5.3.1. Consideration has been given to the potential effect of changes in air quality within the identified European sites, with a particular focus on qualifying features, including:

- changes in nitrogen oxide (NO_X) and ammonia (NH_3) concentrations in relation to the Critical Levels for these pollutants; and
- Changes in nitrogen (N) deposition in relation to the relevant Critical Loads.

5.3.2. Critical Loads and Levels are metrics used for assessing the risk of air pollution impacts to sensitive vegetation and ecosystems.

CRITICAL LEVELS FOR NO_X AND NH_3

5.3.3. Critical Levels are used to estimate the exposure of sensitive vegetation and ecosystems to some important airborne pollutants, below which significant harmful effects are not expected to occur. They are not habitat specific, as with Critical Loads, but have been set to cover broad vegetation types. These levels have been adopted by the European Union and the United Nations Economic Commissions for Europe (UNECE) and are used as regulatory standards and are expressed in units of µg/m^3 (micrograms per cubic metre).

5.3.4. The relevant Critical Levels for NOx and NH_3 relating to the protection of vegetation and ecosystems are summarised in Table 5-3.

Table 5-3 - Relevant NO_x and NH_3 Critical Levels for the Protection of Vegetation and Ecosystems

Pollutant		Concentration ($\mu g/m^3$)	Averaging Period
Nitrogen oxides (NOx)		30	Annual Mean
		75	24-hours
Ammonia (NH_3)	Lower Plants	1	Annual Mean
	Higher Plants	2 – 4 (3)	Annual Mean

CRITICAL LOADS

5.3.5. In addition to the direct effect of pollutant concentrations in the air, vegetation can also be affected by the deposition of pollutants and particles onto both the ground and vegetation. Close to roads, nitrogen deposition can be of concern for sensitive ecological sites as it can result in a variety of adverse effects depending on the habitats present (e.g. interfering with photosynthesis, increasing acidification, altering species composition etc).

5.3.6. When considering the effects of nitrogen deposition from the air onto habitats and vegetation, the relevant assessment benchmarks are known as 'Critical Loads'. 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".

5.3.7. In the UK, Critical Loads have been established for a wide range of habitat and vegetation types, reflecting the variation in ecosystem responses. Details of the Critical Loads relevant to a specific habitat or designated site are available from the Air Pollution Information Systems (APIS) website[11]. In relation to Critical Loads, N Dep is expressed in units of kilograms of nitrogen per hectare per year (Kg N/ha/yr).

5.3.8. A summary of the relevant Critical Loads for the identified European sites is provided in Appendix C for the SPAs and Appendix D for the SACs.

BASELINE CONDITIONS

NO_X Concentrations

5.3.9. Existing background annual mean NO_x values for 2020 for the identified European sites have been taken from the national maps provided by the Department for Environment Food and Rural Affairs (Defra)[12], where background concentrations of NO_x have been mapped at a grid resolution of 1x1km for the whole of the UK, and are provided in Appendix E.

[11] http://www.apis.ac.uk/
[12] https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html

5.3.10. The estimated background concentrations obtained from Defra's webpages for 2020 indicate existing exceedances of the Critical Level for annual mean NO_X concentrations (of 30µg/m^3) at background locations within the vicinity of the following European sites:

- Thursley, Ash, Pirbright & Chobham SAC; and
- South West London Waterbodies SPA.

5.3.11. The Critical Level is predicted to be met at all other European sites (i.e. Richmond Park SAC, Wimbledon Common SAC, Windsor Forest and Great Park SAC and Thames Basin Heaths SPA). Notwithstanding this, it should be noted that background concentrations are representative of concentrations that can be experienced away from a pollution source. Therefore, within increasing distance towards a pollution source, such a busy road, annual mean NOx concentrations will increase such that there could be the potential for exceedances of the Critical Level for this pollutant at all European sites at locations near to the road edge, and the use of background annual mean NOx concentrations in the screening process should be treated with caution.

NH_3 Concentrations

5.3.12. From an initial review of the data provided in Appendices C and D, baseline concentrations of annual mean NH_3 are already above the relevant Critical Levels at the following European sites:

- **Thursley, Ash, Pirbright & Chobham SAC** where the maximum value indicates the potential for exceedances of the Critical Level for Lower Plant Assemblages of 1µg/m^3 (albeit it the average value is below the relevant CL value); and
- **Windsor Forest & Great Park SAC** where the maximum, minimum and average values all indicate exceedances of the Critical Level for Lower Plant Assemblages of 1µg/m^3.

5.3.13. At the remaining European sites, the relevant Critical Level for annual mean NH_3 concentrations is being met. Notwithstanding this, the potential for effects due to increased NH_3 as a result of the emerging LP cannot be discounted, particularly taking into account that background concentrations of NH_3 are forecast to increase year on year[13].

N Deposition

5.3.14. In relation to the maximum N Dep values presented in Appendix C and D, these show that there are some locations within the identified European sites[14] where the Critical Loads are already being exceeded (based on the Lower Critical Load range, applying precautionary principle). This includes locations within the following designated sites:

- Richmond Park SAC;
- Thursley, Ash, Pirbright & Chobham SAC;
- Windsor Forest & Great Park SAC; and
- Thames Basin Heaths SPA.

[13] https://data.jncc.gov.uk/data/04f4896c-7391-47c3-ba02-8278925a99c5/JNCC-Report-665-FINAL-WEB.pdf
[14] i.e. that fall within the identified ZoI.

5.3.15. This is not to say that all these areas will be significantly impacted by SBC's emerging LP but it does highlight areas that will be particularly sensitive to any changes in air quality as a result of SBC's emerging LP.

5.3.16. The Lower Critical Load is met within South London Waterbodies SPA where the applicable Critical Load range (20 – 30 kg/N/ha/yr) is higher than for the habitats found within the above European Sites.

PUBLIC ACCESS / DISTURBANCE

5.3.17. As part of the information gathering, consideration has also been given to the sensitivities of the European sites to public access and disturbance. Development in proximity to these sites can lead to an increase in visits to the sites, with the result that additional pressures can arise including increased incidence of fire, disturbance, trampling and increased predation rates in heathland environments[15] and disturbance of birds which make up the qualifying features of the site.

5.3.18. The European sites identified in this review include those designated for habitats, specifically heathland and woodland, those designated for heathland or wetland bird species, and sites designated for invertebrate interest. The habitats or qualifying features of the European sites are therefore vulnerable to additional pressures from public access or disturbance through different mechanisms.

5.3.19. The location of the identified European sites in south east England places them in a location of acute pressure from high population density and predicted growth, with the corresponding identified trend to visit these sites more[16].

5.3.20. The review has considered the high-level pressures and threats to each site associated with public access and disturbance based on published research and reports for individual sites and the effects of access generally on habitats and species.

5.4 INFORMATION RELATING TO PUBLIC ACCESS AND DISTURBANCE

5.4.1. Baseline conditions for public access and disturbance will need to be subject to detailed review on a site-by site basis as there is no centralised data set for existing and future user pressure. This will be informed by the following:

- A review of in-combination effects with other Local Plans for surrounding Authorities to understand the cumulative increase in residents with the potential to affect the European sites over the Plan period.
- A review of existing baseline user surveys (including site-specific Visitor Access Pattern reports, species-specific disturbance studies, site-specific car park usage surveys and supporting information for Site Improvement Plans.

[15] Underhill-Day, 2005 *A literature review of urban effects on lowland heaths and their wildlife* English Nature Report 623
[16] Lake, S.; Liley, D.; Saunders, P. 2020 *Recreation use of the New Forest SAC/SPA/Ramsar: Impacts of recreation and potential mitigation approaches*. Unpublished report by Footprint Ecology

- A review of existing site-specific strategic mitigation measures to address public access and disturbance and the effectiveness of site management measures in protecting habitats and qualifying features. Note that mitigation measures cannot be included in HRA Stage 1 Screening.

5.5 DISCUSSION OF POTENTIAL EFFECTS

Table 5-4 – Discussion of Identified Pressures and Threats

Pressure/Threat	Habitats Site	Discussion
Air pollution: impact of atmospheric nitrogen deposition	Thames Basin Heaths	All allocated sites over 7km from Habitats Site o The SIP states: *"Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection. The aerial pollution may be promoting changes in species composition of mires towards Molinia and sedge dominated systems rather than Sphagnum dominated; spread of Molinia into wet and dry heath also appears to be promoted by high nitrate levels. This is most likely to be a current issue at Chobham Common but may represent a chronic adverse impact over the complex as a whole".*
	Thursley, Ash, Pirbright & Chobham	All proposed site allocations are over 4.7km from the European site. Whilst this still falls within the identified ZoI, it does suggest that a reasonable degree of distribution of traffic over the local network is likely to have occurred between the proposed site allocation and European site. As Thames Basin Heaths SPA and Thursley, Ash, Pirbright & Chobham share a SIP, the extract (as outlined for Thames Basin Heaths SPA above) is equally applicable/relevant to Thursley, Ash, Pirbright & Chobham SAC.
	Windsor Forest and Great Park	All proposed site allocations are over 5km from the European site. Whilst this still falls within the identified ZoI, it does suggest that a reasonable degree of distribution of traffic over the local network is likely to have occurred between the proposed site allocation and European site. N Dep currently exceeds the site relevant Critical Loads. The SIP suggests that *likely sources include Heathrow airport which is close to Windsor Forest and Great Park SAC. Air quality is likely to be an issue for old trees, fungi and lichens*.
	Thames Basin Heaths	All allocated sites over 7km from the European site. Public access and disturbance are listed as both

Pressure/Threat	Habitats Site	Discussion
Public access/ disturbance		pressures and threats on the designated site and specifically the features of European nightjar, Woodlark and Dartford Warbler. The proposed measure in the Site Improvement Plan to address this is the creation of an over-arching access management strategy however it is uncertain how such measures can effectively mitigate additional visitors as nearby resident numbers increase. Whilst the designated site is over 7km from the nearest development site allocation, this is not a distance beyond which it can be assumed new residents will not travel to visit. The Site Improvement Plan identifies that parts of the SPA are already subject to high levels of recreational use and that a significant proportion of this is dog walking, with a likely associated effect on the distribution, breeding success and overall numbers of ground nesting-birds. The Site Improvement Plan also identifies the "avoidance" measures in place, including the provision of Suitable Accessible Natural Green Space (SANGS) for surrounding areas, but additional research and habitat management are also presented as required to manage the pressures and threats from public access.
	Thursley, Ash, Pirbright & Chobham	This designated site overlaps with the Thames Basin Heaths SPA. The Site Improvement Plan predominately focuses on the effects of disturbance on the SPA bird species, however the SAC habitats provide a supporting function for those species and measures targeted at habitat creation for birds to address public pressure and coordination of habitats and pressure across the individual parts of the site complex may have a resulting effect on SAC habitats.
	South West London Waterbodies	All allocated sites within 4km from the European and international site, with eleven within 1km and two allocation sites immediately adjacent. Public access and disturbance are listed as both pressures and threats on the designated site and specifically the features of gadwall and shoveler. The Site Improvement Plan identifies that public access for recreation, including water-based activities on some waterbodies (the designated site is composed of a number of reservoirs, lakes and bodies of water) may disturb these species and/or reduce the habitat available to them. Measures to manage the recreational pressure on these sites, which are likely to be highly attractive to additional nearby residents, have been put forwards including creating alternative recreation opportunities, but such measures will need to be able to effectively

Pressure/Threat	Habitats Site	Discussion
		address the scale and pace of additional development in close proximity to the designated site waterbodies to avoid adverse effects.

6 NEXT STEPS – STAGE 1 SCREENING AND STAGE 2 APPROPRIATE ASSESSMENT

6.1 STAGES OF HABITATS REGULATIONS ASSESSMENT

6.1.1. The above information and data sources will provide a baseline to take the screening assessment forward once the draft allocations have been determined and suitable traffic data is available (further discussed below).

6.1.2. The following section provides the context of the overall HRA process, but it is not anticipated that the LP, given its strategic nature, will go further than the AA stage.

6.1.3. Guidance on the Habitats Directive sets out the step wise approach which should be followed to enable Competent Authorities to discharge their duties under the Habitats Directive and provides further clarity on the interpretation of Articles 6 (3) and 6 (4). The process used is usually summarised in four distinct stages of assessment. As set out in Regulation 3 of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 where Natura 2000 sites are referenced in previously issued guidance, this should be interpreted as relating to the national site network but does not otherwise affect guidance as it applied, before EU exit day.

- Stage 1: Screening: the process which identifies whether effects upon a Natura 2000 site of a plan or project are possible, either alone or in combination with other plans or projects and considers whether these effects are likely to be significant.
- Stage 2: Appropriate Assessment: the detailed consideration of the effect on the integrity of the Natura 2000 site of the plan or project, either alone or in combination with other plans or projects, with respect to the site's conservation objectives and its structure and function.
- Stage 3: Assessment of alternative solutions: the process which examines alternative ways of achieving the objectives of the plan or project that avoid adverse effects on the integrity of the Natura 2000 site.
- Stage 4: Assessment where no alternative solutions exist and where adverse effects remain: an assessment of whether the development is necessary for IROPI and, if so, of the compensatory measures needed to maintain the overall coherence of the Natura 2000 network.

6.1.4. It is normal practice to work through the first two stages of HRA, screening and AA and only consider Stages 3 and 4 when residual effects remain after the application of mitigation measures and there is still a requirement to proceed.

6.1.5. The precautionary principle is applied at all stages of the HRA process. In relation to screening this means that projects or plans where effects are considered likely and those where uncertainty exists as to whether effects are likely to be significant must be subject to the second stage of the HRA process, AA.

6.2 GUIDANCE

6.2.1. The following guidance should be referred to in undertaking the HRA of SBC's emerging LP:

HRA PROCEDURE

- Department for Communities and Local Government (August 2006) Planning for the protection of European Sites: Appropriate Assessment. Guidance for Regional Spatial Strategies and Local Development Documents. Draft.
- DMRB (2019a) Sustainability & Environment Appraisal LA 115 Habitats Regulations Assessment (formerly HD 44/09) Revision 1.
- English Nature (2006) draft Guidance – The Assessment of Regional Spatial Strategies and Sub-regional strategies under the provisions of the Habitats Regulations.
- European Commission (2000). Managing Natura 2000 Sites, the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Available online: http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf. Accessed [27/04/2020].
- Scottish Natural Heritage (January 2015) Habitats Regulations Appraisal of Plans Guidance For Plan-Making Bodies In Scotland Version 3.0 originally prepared by David Tyldesley And Associates.
- Tyldesley, D. and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (July 2020 Edition) UK DTA Publications Ltd.

AIR QUALITY

- APIS (2020). Air Pollution Information System Database. Available online: www.apis.ac.uk. Accessed: [November 2020].
- Chartered Institute of Ecology (January 2021) Advisory Note: Ecological Assessment of Air Quality Impacts.
- Holman et al (2020). A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.1, Institute of Air Quality Management, London.
- Natural England (2018). Approach to Advising Competent Authorities on Road Traffic Emissions and HRAs V1.4 Final - June 2018 Internal guidance.

EUROPEAN SITES IDENTIFICATION

- Convention on Wetlands of International Importance especially as Waterfowl Habitat. Ramsar (Iran), 2 February 1971. UN Treaty Series No. 14583. As amended by the Paris Protocol, 3 December 1982, and Regina Amendments, 28 May 1987.
- Joint Nature Conservation Committee (JNCC) (2016). SAC and SPA Standard Data Forms and Ramsar Information Sheets. Available online: http://www.jncc.gov.uk/. Accessed [26/01/2021].

6.3 HRA POLICY GUIDANCE

- Council of the European Union (1992). Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora. Available online: http://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:31992L0043. Accessed: [26/01/2021].
- Council of the European Union (2009). Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds. Available online: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:ev0024. Accessed: [26/01/2021].
- Ministry of housing, communities and local government (2019). National Planning Policy Framework.

- European Communities (2007). Guidance document on Article 6 (4) of the 'Habitats Directive' 92/43/EEC; Available online: http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf Accessed: [26/01/2021].
- Her Majesty's Stationary Office (2017). The Conservation of Habitats and Species Regulations 2017/490.

6.4 DATA AND INFORMATION SOURCES

6.4.1. This section provides guidance on the HRA process and data and information sources which will be required through the screening and AA stages of the LP HRA. Air quality and in-combination effects will be LP critical areas in the HRA and are the focus of the following sections.

6.4.2. It is important to note that at this stage details of strategic priority roads (new roads and road improvements) are yet to be determined and therefore this information will need to be reviewed when policies and spatial locations of the proposed schemes are known.

6.4.3. At a greater level of plan detail, the screening and AA stages have more specific data requirements. At AA stage and in any "in-combination" assessment air quality modelling based on local traffic data and modelling is a fundamental requirement. In addition, SBC's emerging LP may have implications which result in a wide of range of potential effects (as noted in Table 5.2) on European sites within the Borough and the surrounding area. As such additional data and information sources will be necessary to meet the requirements of a robust evidence base, for example visitor survey data for specific European sites where recreation pressures are a recognised factor.

AIR QUALITY INPUT

6.4.4. The sensitivity of European sites to changes in air quality is fundamental to the screening and AA (if required) of the LP and associated projects. This section provides details of the methodology applied in the assessment undertaken in relation to air quality changes as a result of the implementation of the specific and detailed policies, and development projects.

6.4.5. Consultation will be undertaken with key local authority contacts to source relevant data and Natural England to agree the approach and methodology to any assessment.

6.4.6. The air quality assessment will be undertaken within reference to the methodologies contained within guidance published by the following organisations: Natural England[17], the Institute of Air Quality Management (IAQM)[18] and CIEEM[19]. Both the IAQM and CIEEM guidance take into account recent case law such as the Wealden Judgement and The Netherlands Air Quality Judgement (see Appendix A), as well as the need to assess 'in-combination' effects on European sites (this aspect is

[17] Natural England (2018). Approach to Advising Competent Authorities on Road Traffic Emissions and HRAs V1.4 Final - June 2018 Internal guidance

[18] Holman et al (2020). A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.1, Institute of Air Quality Management, London.

[19] Chartered Institute of Ecology (January 2021) Advisory Note: Ecological Assessment of Air Quality Impacts.

also covered within Natural England's guidance). The two guidance documents are aimed at both Air Quality and Ecological specialists and provide a framework around the assessment of road traffic emissions and subsequent effects on European sites. They are supplementary and should be read in conjunction with one another.

6.4.7. Paragraphs 4.23 – 4.25 of the Natural England guidance provide screening thresholds for determining whether a predicted change on a designated site due to the road traffic emissions associated with a plan or project are likely to be significant. These are a change in Annual Average Daily Traffic (AADT) flows of more than 1000 vehicles or a chance of 1% of the relevant Critical Load or Level. These criteria apply where there are sensitive qualifying features within a Habitats Site known to be present within 200m from the edge of a road on which a plan or project will generate traffic.

6.4.8. Traffic data will be required for all roads within 200m of the European sites, to include AADT flows, vehicle speeds and the percentage of HDVs. It is anticipated that this traffic data will be required for the following scenarios as a minimum:

- Current baseline;
- Future year baseline;
- Future year with SBC's emerging LP; and
- Future year with all relevant plans and policies in place for the 'in-combination' assessment.

6.4.9. Where there is a designated site within 200m of road where there is change in AADT flows of more than 1000 vehicles it will be necessary to predict concentrations of NO_x, N Dep and NH_3 at a number of transects back from these roads within the European sites. This will be undertaken using the dispersion model ADMS-Roads (version 5.0.0.1). This model uses detailed information regarding traffic flows on the local road network, surface roughness, and local meteorological conditions to predict pollutant concentrations at specific receptor locations, as determined by the user.

6.4.10. Where there is a designated site within 200m of road where there is change in AADT flows of more than 1000 vehicles it will be necessary to predict concentrations of NO_x, N Dep and NH_3 at a number of transects back from the affected roads within the European sites. This will be undertaken using the dispersion model ADMS-Roads (version 5.0.0.1). This model uses detailed information regarding traffic flows on the local road network, surface roughness, and local meteorological conditions to predict pollutant concentrations at specific receptor locations, as determined by the user.

6.4.11. The ADMS-Roads dispersion model has been widely validated for this type of assessment and is considered to be fit for purpose. Model validation undertaken by the software developer will not have included specific local area validation.

6.4.12. To determine the performance of the model at a local level, a comparison of modelled results with the results of monitoring carried out by SBC will be completed. This process of verification will minimise modelling uncertainty and systematic error by correcting modelled results by an adjustment factor to gain greater confidence in the final results. Relevant monitoring data will therefore need to be made available by SBC for the purposes of model verification.

6.4.13. It is usually the role of a suitable qualified ecologist, rather than an air quality specialist, to determine whether predicted impacts on air quality within a designated site would result in a significant effect on the habitats present within the site. However, screening criteria can be used by the air quality

specialists to identify when predicted impacts are unlikely to result in significant effect, thereby not requiring further assessment or specific mitigation.

6.4.14. For the assessment, in describing the potential impacts on annual mean NO_x, 24-hour mean NO_x, annual mean NH_3 concentrations and N Dep, reference is made to guidance contained within the IAQM's '*A guide to the assessment of air quality impacts on designated nature conservation sites*' (May 2020). As mentioned in the IAQM guidance for NO_x concentrations, the '*UNECE Working Group on Effects strongly recommended the use of the annual mean value, as the long-term effects of NOx are thought to be more significant than the short-term effects*'.

6.4.15. Where the predicted change, either of the any of the LP and associated policies 'alone' or 'in-combination' is ≤1% of the relevant Critical Level or Critical Load, the impacts can be considered 'non-significant'. Where the predicted impacts are greater than 1%, this does not mean that the LP and associated policies will give rise to significant adverse effects at the European site. Use of the 1% criteria is simply used as a trigger for identifying when the impacts will require further assessment and evaluation by an ecologist.

6.4.16. In relation to short-term (24-hour mean) impacts on ecological receptors, the IAQM guidance advises that an effect is insignificant if a short-term process contribution is less than 10% of the short-term environmental standard.

6.4.17. As described earlier, Natural England consider an increment of 1% (or less) of the relevant long-term Critical Level or Critical Load alone as inconsequential. A change of such magnitude, i.e. two orders of magnitude below the criterion for harm to occur, is challenging to measure (even by the most precise air quality instrument) and difficult to distinguish from natural fluctuations in measured data (due to other variables such as variations in emissions and weather). For this reason, and others, it has been used as a precautionary screening criterion.

6.4.18. The 1% threshold has become widely used throughout the air quality assessment profession to define a reasonable quantum of long-term pollution which is not likely to be discernible from fluctuations in background/measurements. For example, for many habitats (with a lower Critical Load of 10kg/N/ha/yr), 1% of the Critical Load for nitrogen deposition equates to a very small change of less than 0.1 kg/N/ha/yr, well within the expected normal variation in deposition. Its use has not been challenged by the courts, but it should be used in the context of an in-combination assessment.

Review of the Traffic Data

6.4.19. As part of this initial phase of works, WSP has held discussions with the transport planners at Surrey County Council (SCC) regarding the traffic data likely to be available for use within any future air quality modelling (to be undertaken once the draft site allocations have been confirmed). These discussions and a review of SBC's Draft Local Plan Strategic Highway Assessment Part 2: Results and Analysis (2019) indicate that:

- The baseline year of SCC's traffic model is 2014. This means that it does not accurately reflect the current baseline year (2020/21) and neither is it directly comparable with Defra's latest tools for Local Air Quality Management (LAQM) which would be utilised within any air quality modelling

including their NO_X to NO_2 calculator and background maps[20]. SCC has stated that once they have updated their County Model, the base year will be changed to 2019. This would be much more desirable in relation to the air quality modelling although understand that this data is unlikely to be available until Summer 2021.

- **The extent of the model does not provide sufficient coverage** in the vicinity of the identified European sites to enable the change in traffic due to SBC's emerging LP to be assessed against relevant thresholds (i.e. changes of 1000 AADT or more due to the emerging LP 'alone' or 'in-combination' with other plans and projects).
- **Lack of suitable data for the inter-peak:** Although the model is able to reflect an average inter-peak (10.00 – 16.00) hour, it has not been the subject of specific validation and, on this basis, SCC has confirmed the outputs for the inter-peak should not be used for the purpose of the air quality assessment. Instead, they have advised that modelled AM peak hour flows should be used to derive an average week-day flow. In our experience, factoring peak hour data to AADT can often exacerbate the predicted change in traffic due to a scheme or LP. It also assumes that the direction of change in the AM peak is representative of the pattern of change across the 24-hour period which is often not the case. We would always advocate the inclusion on inter-peak data wherever available.
- **The forecast year in the sub-area model is 2035, matching the end of the LP period.** It maybe that 2035 is not a worst case in terms of potential effects on human and ecological receptors due to the balance between the forecast growth in traffic on the local road network, the forecast reduction in NO_X emissions and any changes in background concentrations of annual mean NH_3 and NO_X and background N deposition. Of particular is note is the Government's ban on the sale of new diesel and petrol vehicles which comes into force in 2030.

6.4.20. We recommend that a meeting with SCC, SBC and WSP is undertaken to further discuss the traffic data once there is greater clarity on the approach and programme going forwards.

6.5 IN-COMBINATION ASSESSMENT

6.5.1. It is a requirement of the Habitats Regulations to consider the effects of projects or plans "in combination" at both the screening stage and during the AA. Articles 24, 63 and 105 of the Habitats Regulations require Natural England and other competent authorities to consider the effects of plans or projects alone and in combination with other plans or projects. The 'in-combination' requirement is undertaken in order to make sure that prior to their authorisation the effects of numerous proposals, which alone would not result in a significant effect, are further assessed to determine whether their combined effect would be significant enough to require more detailed assessment.

6.5.2. The landmark Waddenzee judgment provides a clear interpretation of the legislation. Paragraphs 53 and 54 of the Judgment state:

6.5.3. "*according to the wording of that provision [Article 6(3) of the Habitats Directive] an appropriate assessment of the implications for the site concerned of the plan or project must precede its approval and take into account the cumulative effects which result from the combination of the plan*

[20] https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html

or project with other plans or projects in view of the sites conservation objectives. Such an assessment therefore implies that all the aspects of the plan or project which can, individually or in combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field. ....."

6.5.4. Table 6-1 outlines the types of plans and projects that should be considered in an in-combination assessment:

Table 6-1 - Types of plans and projects considered at "in-combination" assessment

The incomplete or non-implemented parts of plans or projects that have already commenced.
Plans or projects given consent or given effect but not yet started.
Plans or projects currently subject to an application for consent or proposed to be given effect.
Projects that are the subject of an outstanding appeal.
Ongoing plans or projects that are the subject of regular review.
Any draft plans being prepared by any public body.
Any proposed plans or projects published for consultation prior to application.
Projects being proposed or being undertaken by a competent authority itself which require no external authorisation.

6.5.5. There are likely to be a large number of other live plans or projects which could all potentially fall within the scope of an in-combination assessment, as such a pragmatic approach to identifying the most pertinent ones is normally taken. It is considered reasonable to initially limit a search to those plans and projects which are of most direct relevance to the subject plan under HRA. This may be those which are simply the closest to the site or within a certain distance from it, or the most influential in nature.

6.5.6. A careful analysis of the relevant plans and projects should be taken during an in-combination assessment to avoid combining the insignificant effects of the subject plan with the effects of other plans or projects which can be considered significant in their own right. The latter should always be dealt with by their own HRA. Otherwise, doing so may result in the subject plan or project being

subject to unreasonable and disproportionate restrictions and conditions, or even refusal, due to the influence of the greater effects of other plans/projects.

6.5.7. Plans and projects will also need to be considered outside of the SBC boundary given the potential wide-ranging implications of Local Plans, particularly in relation to changes in air quality. Consultation with other local authorities bordering SBC will be necessary during the conversations regarding the scope of the 'in-combination' assessment.

7 CONCLUSIONS

7.1.1. This document provides guidance on the likely data sources, information requirements and the process of HRA screening and further stages of assessment if necessary. It also provides an indication of where the ecological implications of the LP will lie and which European sites are vulnerable to known pressures and threats.

7.1.2. There are a large number of European sites within 10km of the SBC's administrative boundary, and there will be implications for some of these European sites as a result of SBC's emerging LP.

7.1.3. A significant amount of data collation and analysis work has been undertaken in this review, in particular scrutiny of the air quality criteria in relation to sensitivity features within the European sites, and these are given in Appendices to this report.

7.1.4. We have identified two specific pressures and threats which are known to affect some of the European sites and can also be worsened by additional dwellings and residents, as proposed by the draft allocations. These are air pollution: impact of atmospheric nitrogen deposition; and public access/ disturbance. Table 7-1 provides a summary of which sites may be affected and how.

Table 7-1 – Summary of Identified Pressures and Threats

Site name	AQ pressure	Rec pressure
South West London Waterbodies		✓
Thames Basin Heaths	✓	✓
Thursley, Ash, Pirbright & Chobham	✓	✓
Windsor Forest and Great Park	✓	(subject to review)

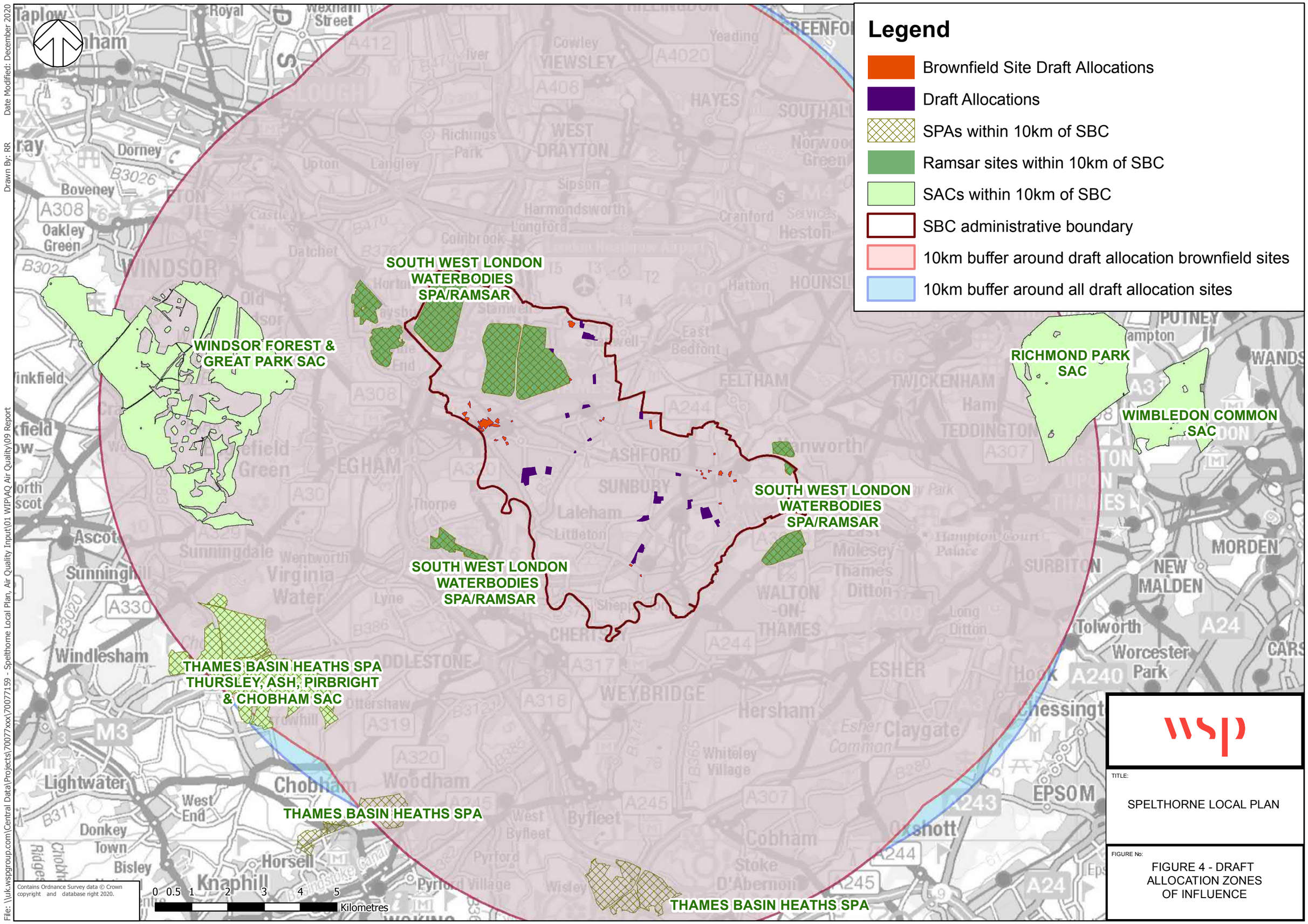
7.1.5. The air quality information shows that in some areas of European sites the criteria for both Critical Levels and Loads are currently exceeding thresholds. This will be an important consideration in screening the likely significant effects of the proposed site allocations.

7.1.6. The additional pressure of new residents choosing to visit and specifically recreate within the European sites (including for dog walking or water-based recreation) has the potential to increase the disturbance of species for which the sites are designated, damage to the habitats which support them or are independently a reason for designation.

7.1.7. These data and information from this review will form the baseline for all subsequent HRA work related to SBC's emerging LP. This review is intended to provide a high-level assessment of HRA requirements should the draft allocations, as presented, be progressed by SBC. At Stage 1 Screening the pressures and threats identified above would need to be considered to determine whether the likely changes would fall below relevant thresholds or would be considered Likely Significant Effects (LSE) on the European Sites, triggering the next stage of the HRA process (Appropriate Assessment).

7.1.8. Our initial view suggests that the draft allocations are likely to result in impacts in relation to air quality and public access and disturbance on the identified European sites and therefore LSE cannot be discounted.

8 FIGURES



Date Modified: December 2020

Drawn By: RR

File: \\uk.wspgroup.com\Central Data\Projects\70077xxx\70077159 - Spelthorne Local Plan, Air Quality Input\01 WIP\AQ Air Quality\09 Report

wsp

TITLE:

SPELTHORNE LOCAL PLAN

FIGURE No:

FIGURE 4 - DRAFT ALLOCATION ZONES OF INFLUENCE

Legend

- Draft Allocations
- SPAs within 10km of SBC
- Ramsar sites within 10km of SBC
- SACs within 10km of SBC
- 10km buffer surrounding Wimbledon Common SAC
- SBC administrative boundary

WINDSOR FOREST & GREAT PARK SAC

SOUTH WEST LONDON WATERBODIES SPA/RAMSAR

RICHMOND PARK SAC

WIMBLEDON COMMON SAC

SOUTH WEST LONDON WATERBODIES SPA/RAMSAR

SOUTH WEST LONDON WATERBODIES SPA/RAMSAR

THAMES BASIN HEATHS SPA

THAMES BASIN HEATHS SPA

THAMES BASIN HEATHS SPA

0 0.5 1 2 3 4 5 Kilometres

wsp

TITLE:

SPELTHORNE LOCAL PLAN

FIGURE No:

FIGURE 1

Date Modified: December 2020
Drawn By: RR
File: \\uk.wspgroup.com\Central Data\Projects\70077xxx\70077159 - Spelthorne Local Plan, Air Quality Input\01 WIP\AQ Air Quality\09 Report

Appendix A

CEJU RULINGS

THE COUNCIL FOR JUSTICE OF THE EUROPEAN UNION (CJEU) RULINGS

A number of CJEU rulings are relevant to the HRA screening exercise and are noted below. At the present time the position, under section 6(3) EU (Withdrawal) Act 2018 (as amended), is that the courts in the UK, with the sole exception of the Supreme Court, will continue to be bound by HRA judgments handed down by the CJEU and by domestic courts prior to 31 December 2020 when interpreting the Conservation of Habitats and Species Regulations 2017 (as amended). This is the case as long as the Conservation of Habitats and Species Regulations 2017 (as amended) remain unmodified by Parliament. The Supreme Court will, however, be at liberty to depart from these judgments after 31 December 2020 if they consider it appropriate to do so.[21]

THE WEALDEN JUDGEMENT

The Wealden Judgement, handed down in March 2017, has introduced additional complexities into the assessment process in relation to in-combination and cumulative effects.

Prior to this Judgement, air quality impacts on European sites were only considered alongside roads where the traffic growth associated with the individual Plan or Project being assessed exceeded specified screening criteria. These criteria were typically based on changes in vehicle movements and taken from the Design Manual for Roads and Bridges (DMRB, HA207/07), namely: increases of 1000 vehicles per day or 200 Heavy Goods Vehicles per day (as Annual Average Daily Traffic (AADT)).

The Wealden Judgement means that every single plan or project which, alone, is predicted to give rise to any increase in traffic or other air emission (however small) must be subjected to an in-combination assessment with other plans or projects (which would include those plans or projects with a similar tiny impact). However, the judgement did not rule out the application of thresholds in principal and this approach is normally taken as the basis of the assessment.

The judgement has led to a more detailed analysis of three key questions to discern which plans and project are those where a detailed “in combination” assessment is required in relation to changes in air quality:

1. Is your plan or project putting emissions into the air?;

2. If so, are those emissions at a level where they could actually be measured / perceived?; and

3. If so, is there a realistic (rather than hypothetical) risk that those emissions, alone, will have an adverse effect on the ecology of a SAC / SPA?

A fuller justification will be required when applying the threshold approach.

[21] Freeths Habitats Regulations update 2020. Available at: https://communications.freeths.co.uk/44/1637/october-2020/the-habitats-regulations-assessment-regime-after-31-december-2020---how-will-it-look-.asp?sid=8bf6fad5-597a-43c6-8f70-61503ec0adb9

PEOPLE OVER WIND (THE SWEETMAN CASE)

The Court of Justice of the European Union's (CJEU's) decision in the matter of People Over Wind and Sweetman v Coillte Teoranta (C-323/17) (hereafter referred to as the 'Sweetman Case'), states that:

'Article 6(3) ……. must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an Appropriate Assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of measures intended to avoid or reduce the harmful effects of the plan or project on that site.'

In the new judgement the CJEU concluded that mitigation measures could not be considered as part of the project, and thus that the screening stage of HRA should not take account of them. This will undoubtedly be tested further in the courts in coming months and years, but the key issue is whether the mitigation measures proposed can genuinely be considered as part of the project, in that they would happen in any case, irrespective of the Habitats Site. If not, then they should be considered mitigation measures, and considered at the Appropriate Assessment stage of HRA.

This is an emerging issue for local authorities and means that, because of the potential for 'in-combination effects and the fact that HRA Screening should not take into account measures targeted at mitigating effects on European sites. Therefore, it is becoming increasingly commonplace for local authorities to conduct an Appropriate Assessment of all project, plans and planning applications (i.e. these are often no longer screened out, by way of an HRA Screening as has been the practise to date).

CJEU RULING IN THE NETHERLANDS NITROGEN AND AGRICULTURE CASES C-293/17 AND C-294/17

The final Court Judgement in relation to these two cases was handed down on the 7th November 2018. The ruling is still being reviewed by industry professionals and Natural England is yet to issue its Position Statement on the ruling. The judgement relates to the assessment of agricultural activities under the Habitats Regulations, but has potential implications for the assessment of changes in nitrogen (N) deposition in relation to air quality (as the air quality calculations draw upon N deposition rates from APIS and guidance within the DMRB which assumes a 2% reduction in N deposition year on year).

Of particular relevance to the assessment of air quality effects on European sites, the Court of Justice of the European Union ruled that:

"An 'appropriate assessment' may only take into account the existence of Article 6(1) 'conservation measures', or Article 6(2) 'preventive measures', or specific measures adopted for a conservation programme, or 'autonomous' measures not in the programme, if the expected benefits of those measures are certain at the time of the assessment.

The Ruling makes clear that certainty and a thorough and in-depth examination of the scientific soundness is required that that there is no reasonable scientific doubt as to the absence of adverse effects of each plan or project on the integrity of the site concerned.

KOKOTT RULING

In the Opinion of Advocate General Kokott in Case C-6/04 Commission v UK [2005] ECR I-9017 at paragraph 49 she noted that an assessment of plans cannot by definition take into account all effects because

"Many details are regularly not settled until the time of the final permission" and "[i]t would also hardly be proper to require a greater level of detail in preceding plans or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated on one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure".

Appendix B

EUROPEAN SITES DETAILS, INCLUDING QUALIFYING FEATURES AND CONSERVATION OBJECTIVES

Site Name	Site Size (Ha)	Summary of reasons for designation summarised on Natura 2000 Standard Data Form or Ramsar Information Sheet	Activities with greatest effect upon the site, as listed on Natura 2000 standard data forms and Information Sheets for Ramsar Wetlands	Pressures and threats listed within the Site Improvement Plan (NE, undated) (T=Threat, P=Pressure)	Conservation Objectives
Richmond Park SAC	846.3	**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.	▪ No threats listed[33]	▪ No current issues affecting the Natura 2000 feature(s) have been identified on this site [34]	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; ▪ The extent and distribution of the habitats of qualifying species ▪ The structure and function of the habitats of qualifying species ▪ The supporting processes on which the habitats of qualifying species rely ▪ The populations of qualifying species, and, ▪ The distribution of qualifying species within the site.[35]
South West London Waterbodies Ramsar	828.1	**Ramsar criterion 6 –** species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation): Species with peak counts in spring/autumn: ▪ Northern shoveler *Anas clypeata* (NW & C Europe) - 397 individuals, representing an average of 2.6% of the GB population (5-year peak mean 1998/9-2002/3) Species with peak counts in winter: ▪ Gadwall *Anas strepera strepera* (NW Europe) - 487 individuals, representing an average of 2.8% of the GB population (5-year peak mean 1998/9- 2002/3)	▪ No factors reported[36]		
South West London	825.1	**ARTICLE 4.2 QUALIFICATION (79/409/EEC)** **Over winter the area regularly supports:**	▪ I02 - Problematic native species ▪ K01 - Abiotic (slow) natural processes	▪ P/T – Public access/ disturbance ▪ P/T – Changes in species distributions	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the

[33] Richmond Park SAC Natura 2000 form. Available at: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030246.pdf (Accessed on: 26/01/2021)
[34] Richmond Park Site Improvement Plan. Available at: http://publications.naturalengland.org.uk/file/4641498714865664 (Accessed on 26/01/2021)
[35] Richmond Park SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/5521612917178368 (Accessed on: 26/01/2021)
[36] South West London Waterbodies Ramsar Natura 2000 form. Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11065.pdf (Accessed on: 26/01/2021)

Site Name	Site Size (Ha)	Summary of reasons for designation summarised on Natura 2000 Standard Data Form or Ramsar Information Sheet	Activities with greatest effect upon the site, as listed on Natura 2000 standard data forms and Information Sheets for Ramsar Wetlands	Pressures and threats listed within the Site Improvement Plan (NE, undated) (T=Threat, P=Pressure)	Conservation Objectives
Waterbodies SPA		▪ Shoveler *Anas clypeata* (North-western/Central Europe) - 2.1% of the population (Five-year peak mean for 1993/94 to 1997/98) ▪ Gadwall *Anas strepera* (North-western Europe) - 2.4% of the population (Five-year peak mean for 1993/94 to 1997/98)	▪ M02 - Changes in biotic conditions ▪ G01 - Outdoor sports & leisure activities, recreational activities ▪ F01 - Marine and Freshwater Aquaculture[37]	▪ P/T – Invasive species ▪ P/T Natural changes to site conditions ▪ P – Fisheries: Fish stocking ▪ T – Inappropriate weed control[38]	site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; ▪ The extent and distribution of the habitats of the qualifying features ▪ The structure and function of the habitats of the qualifying features ▪ The supporting processes on which the habitats of the qualifying features rely ▪ The population of each of the qualifying features, and, ▪ The distribution of the qualifying features within the site.[39]
Thames Basin Heaths SPA	8309.5	**ARTICLE 4.1 QUALIFICATION (79/409/EEC)** **During the breeding season the area regularly** supports: ▪ European nightjar *Caprimulgus europaeus* - 7.8% of the GB breeding population (Count mean (RSPB 1998-99)) ▪ Woodlark *Lullula arborea* - 9.9% of the GB breeding population (Count as at 1997 (Wotton & Gillings 2000)) ▪ Dartford Warbler *Sylvia undata* - 27.8% of the GB breeding population (Count as at 1999 (RSPB))	▪ H04 – Air pollution, air-borne pollutants ▪ G05 – Other human intrusions and disturbances ▪ K02 – Biocenotic evolution, succession ▪ B02 – Forest and Plantation management & use ▪ G01 – Outdoor sports & leisure activities, recreational activities[40]	▪ P/T – Public access/ disturbance ▪ P – Undergrazing ▪ P – Forestry and woodland management ▪ T - Hydrological changes ▪ P - Inappropriate scrub control ▪ P/T – Invasive species ▪ P – Wildlife/ arson ▪ P/T – Air pollution: Impact of atmospheric nitrogen deposition ▪ T – Feature location/ extent/ condition unknown ▪ T -Military ▪ P – Habitat fragmentation[41]	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; ▪ The extent and distribution of the habitats of the qualifying features ▪ The structure and function of the habitats of the qualifying features ▪ The supporting processes on which the habitats of the qualifying features rely ▪ The population of each of the qualifying features, and, ▪ The distribution of the qualifying features within the site.[42]
Thursley, Ash, Pirbright and Chobham SAC	5154.5	**Annex I habitats that are a primary reason for selection of this site** ▪ 4010 Northern Atlantic wet heaths with *Erica tetralix* This site represents lowland northern Atlantic wet heaths in south-east England. The wet heath at Thursley is NVC type M16 *Erica tetralix – Sphagnum compactum* and contains several rare plants, including great sundew *Drosera anglica*, bog hair-grass *Deschampsia setacea*, bog orchid *Hammarbya paludosa* and brown beak-sedge	▪ G05 - Other human intrusions and disturbances ▪ A04 - Grazing ▪ H04 - Air pollution, air-borne pollutants ▪ J02 - Human induced changes in hydraulic conditions	▪ See above (Thames Basin Heaths SPA)	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; ▪ The extent and distribution of qualifying natural habitats

[37] South West London Waterbodies SPA Natura 2000 form. Available at: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9012171.pdf (Accessed on:26/01/2021)
[38] South West London Waterbodies SPA Site Improvement Plan. Available at: http://publications.naturalengland.org.uk/file/5135484288237568 (Accessed on: 26/01/2021)
[39] South West London Waterbodies SPAConservation Objectives. Available at: http://publications.naturalengland.org.uk/file/5411059804667904 (Accessed on: 26/01/2021)
[40] Thames Basin Heaths SPA Natura 2000 form. Available at: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9012141.pdf (Accessed on: 26/01/2021)
[41] Thames Basin (Thames Basin Heaths SPA, Thursley, Ash, Pirbright & Chobham SAC) Site Improvement Plan. Available at: http://publications.naturalengland.org.uk/file/5946121331408896 (Accessed on: 26/01/2021)
[42] Thames Basin Heaths SPA Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/5048458801315840 (Accessed on: 26/01/2021)

Site Name	Site Size (Ha)	Summary of reasons for designation summarised on Natura 2000 Standard Data Form or Ramsar Information Sheet	Activities with greatest effect upon the site, as listed on Natura 2000 standard data forms and Information Sheets for Ramsar Wetlands	Pressures and threats listed within the Site Improvement Plan (NE, undated) (T=Threat, P=Pressure)	Conservation Objectives
		Rhynchospora fusca. There are transitions to valley bog and dry heath. Thursley Common is an important site for invertebrates, including the nationally rare white-faced darter *Leuccorhinia dubia*. ▪ 4030 European dry heaths This south-east England site contains a series of large fragments of once-continuous heathland. It is selected as a key representative of NVC type H2 *Calluna vulgaris – Ulex minor* dry heathland. This heath type has a marked south-eastern and southern distribution. There are transitions to wet heath and valley mire, scrub, woodland and acid grassland, including types rich in annual plants. The European dry heaths support an important assemblage of animal species, including numerous rare and local invertebrate species, European nightjar *Caprimulgus europaeus*, Dartford warbler *Sylvia undata*, sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*. ▪ 7150 Depressions on peat substrates of the *Rhynchosporion* This site contains examples of Depressions on peat substrates of the *Rhynchosporion* in south-east England, where it occurs as part of a mosaic associated with valley bog and wet heath. The vegetation is found in natural bog pools of patterned valley mire and in disturbed peat of trackways and former peat-cuttings.	▪ K02 - Biocenotic evolution, succession[43]		▪ The structure and function (including typical species) of qualifying natural habitats, and The supporting processes on which qualifying natural habitats rely. [44]
Wimbledon Common SAC	51.4	**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	▪ J03 - Other ecosystem modifications ▪ I01 – Invasive non-native species ▪ B02 – Forest and Plantation management & use ▪ H04 – Air pollution, air-borne pollutants[45]	▪ P– Public disturbance ▪ T – Invasive species ▪ T – Habitat fragmentation ▪ P – Air Pollution: impact of atmospheric nitrogen deposition[46]	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; ▪ The extent and distribution of qualifying natural habitats and habitats of qualifying ▪ species ▪ The structure and function (including typical species) of qualifying natural habitats ▪ The structure and function of the habitats of qualifying species

[43] Thursley, Ash, Pirbright and Chobham SAC Natura 2000 form. Available at: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0012793.pdf (Accessed on: 26/01/2021)
[44] Thursley, Ash, Pirbright and Chobham SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/4677991053656064 (Accessed on: 26/01/2021)
[45] Wimbledon Common SAC Natura 2000 form. Available at: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030301.pdf (Accessed on: 26/01/2021)
[46] Wimbledon Common SAC Site Improvement Plan. Available at: http://publications.naturalengland.org.uk/file/5097829219434496 (Accessed on: 26/01/2021)

Site Name	Site Size (Ha)	Summary of reasons for designation summarised on Natura 2000 Standard Data Form or Ramsar Information Sheet	Activities with greatest effect upon the site, as listed on Natura 2000 standard data forms and Information Sheets for Ramsar Wetlands	Pressures and threats listed within the Site Improvement Plan (NE, undated) (T=Threat, P=Pressure)	Conservation Objectives
		received from this site during a recent nationwide survey for the species. The site supports a number of other scarce invertebrate species associated with decaying timber.			▪ The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely ▪ The populations of qualifying species, and, ▪ The distribution of qualifying species within the site.[47]
Windsor Forest & Great Park SAC	1680.2	**Annex I habitats that are a primary reason for selection of this site** ▪ 9190 Old acidophilous oak woods with *Quercus robur* on sandy plains Windsor represents old acidophilous oak woods in the south-eastern part of its UK range. It has the largest number of veteran oaks *Quercus* spp. in Britain (and probably in Europe), a consequence of its management as wood-pasture. It is of importance for its range and diversity of saproxylic invertebrates, including many rare species (e.g. the beetle *Lacon querceus*), some known in the UK only from this site, and has recently been recognised as having rich fungal assemblages. Windsor Forest and Great Park has been identified as of potential international importance for its saproxylic invertebrate fauna by the Council of Europe. **Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site** ▪ 9120 *Atlantic acidophilous* beech forests with *Ilex* and sometimes also Taxus in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*) **Annex II species that are a primary reason for selection of this site** ▪ 1079 Violet click beetle *Limoniscus violaceus* Violet click beetle *Limoniscus violaceus* was first recorded at Windsor Forest in 1937. The site is thought to support	▪ H04 - Air-pollution, air-borne pollutants ▪ I01 – Invasive non-native species ▪ B02 – Forest and Plantation management & use ▪ K04 – Interspecific floral relations[48]	▪ P/T – Forestry and woodland management ▪ T – Invasive species ▪ T – Disease ▪ P – Air Pollution: impact of atmospheric nitrogen deposition[49]	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; ▪ The extent and distribution of qualifying natural habitats and habitats of qualifying species ▪ The structure and function (including typical species) of qualifying natural habitats ▪ The structure and function of the habitats of qualifying species ▪ The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely ▪ The populations of qualifying species, and, ▪ The distribution of qualifying species within the site.[50]

[47] Wimbledon Common SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/6215672493506560 (Accessed on: 26/01/2021)
[48] Windsor Forest & Great Park SAC Natura 2000 form. Available at: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0012586.pdf (Accessed on: 26/01/2021)
[49] Windsor Forest & Great Park SAC Site Improvement Plan. Available at: http://publications.naturalengland.org.uk/file/5106041196904448 (Accessed on: 26/01/2021)
[50] Windsor Forest & Great Park SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/6569964010209280 (Accessed on: 26/01/2021)

Site Name	Site Size (Ha)	Summary of reasons for designation summarised on Natura 2000 Standard Data Form or Ramsar Information Sheet	Activities with greatest effect upon the site, as listed on Natura 2000 standard data forms and Information Sheets for Ramsar Wetlands	Pressures and threats listed within the Site Improvement Plan (NE, undated) (T=Threat, P=Pressure)	Conservation Objectives
		the largest of the known populations of this species in the UK. There is a large population of ancient trees on the site, which, combined with the historical continuity of woodland cover, has resulted in Windsor Forest being listed as the most important site in the UK for fauna associated with decaying timber on ancient trees (Fowles, Alexander & Key 1999). The site was also identified as of potential international importance for its saproxylic invertebrate fauna by the Council of Europ.			

Appendix C

APIS INFORMATION FOR SPAS

Site	Distance from Spelthorne Boundary at nearest point	Species	Relevant Critical Load			N Deposition kg N/ha/yr			Ammonia Critical Level µg NH3/m3 annual mean	NH3 Concentration µg/m3		
			Relevant Habitat	Relevant CL Habitat	CL Range	Maximum	Minimum	Average		Maximum	Minimum	Average
Thames Basin Heaths SPA		*Caprimulgus europaeus* - European nightjar	Coniferous Woodland	Coniferous Woodland	5 - 15	26.5	19.9	21.8	3	1.46	0.9	1.04
			Dry Heaths	Dry Heaths	10- 20	15.7	12	13.1	3	1.46	0.9	1.04
		Lullula arborea - Wood lark	Coniferous Woodland	Coniferous Woodland	5 - 15	**26.5**	19.9	21.8	3	1.46	0.9	1.04
			Dry Heaths	Dry Heaths	10 - 20	15.7	12	13.8	3	1.46	0.9	1.04
		Sylvia undata - Dartford warbler	Dry Heaths	Dry Heaths	10 - 20	15.7	12	13.8	3	1.46	0.9	1.04
South West London Waterbodies		*Anas strepera* (North-western Europe) - Gadwall	Standing open water and canals	Standing open water and canals	No CL available	10.7	9.4	9.9	3	1.85	1.56	1.65
		Anas strepera (North-western Europe) - Gadwall	Neutral Grassland	Neutral Grassland	20 - 30	17.5	15.1	15.7	No CL Stated	1.85	1.56	1.65
		Anas strepera (North-western Europe) - Gadwall	Neutral Grassland	Neutral Grassland	20 - 30	17.5	15.1	15.7	No CL Stated	1.85	1.56	1.65
		Anas clypeata (North-western/Central Europe) - Northern shoveler	Standing open water and canals	Standing open water and canals	No CL available	10.7	9.4	9.9	3	1.85	1.56	1.65
		Anas clypeata (North-western/Central Europe) - Northern shoveler	Standing open water and canals	Standing open water and canals	No CL available	10.7	9.4	9.9	3	1.85	1.56	1.65

Appendix D

APIS INFORMATION FOR SACS

Site	Species	Relevant Critical Load			N Deposition kg N/ha/yr			Ammonia Critical Level µg NH3/m3 annual mean	NH3 Concentration µg/m3		
		Relevant Habitat	Relevant CL Habitat	CL Range	Maximum	Minimum	Average		Maximum	Minimum	Average
Richmond Park SAC	*Lucanus cervus* - Stag beetle	Broadleaved deciduous woodland	Broadleaved deciduous woodland	10 - 20	29.6	27.5	28.4	3	1.87	1.7	1.77
Thursley, Ash, Pirbright & Chobham SAC	Depressions on peat substrates of the *Rhynchosporion*	Depressions on peat substrates of the *Rhynchosporion*	Valley mires, poor fens and transition mires	10- 15	15.7	12	12.7	1	1.46	0.79	0.94
	Northern Atlantic wet heaths with *Erica tetralix*	Northern Atlantic wet heaths with *Erica tetralix*	Northern wet heath: *Erica tetralix* dominated wet heath	10- 20	15.7	12	12.7	1	1.46	0.79	0.94
	European dry heaths	European dry heaths	Dry heaths	10- 20	15.7	12	12.7	1	1.46	0.79	0.94
Wimbledon Common SAC	Northern Atlantic wet heaths with *Erica tetralix*	Northern Atlantic wet heaths with *Erica tetralix*	Northern wet heath: *Erica tetralix* dominated wet heath	10 - 20	16.9	16.9	16.9	1	1.87	1.87	1.87
	European dry heaths	European dry heaths	Dry heaths	10 - 20	16.9	16.9	16.9	1	1.87	1.87	1.87
	Lucanus cervus - Stag beetle	Broadleaved deciduous woodland	Broadleaved deciduous woodland	10 - 20	29.6	29.6	29.6	3	1.87	1.87	1.87
Windsor Forest & Great Park SAC	Old acidophilous oak woods with Quercus robur on sandy plains	Old acidophilous oak woods with *Quercus robur* on sandy plains	Acidophilous *Quercus*-dominated woodland	10-15	27.8	20.8	23	Site specific	1.81	0.97	1.2
	Limoniscus violaceus - Violet click beetle	Broadleaved deciduous woodland	Broadleaved deciduous woodland	10-20	27.8	20.9	23	3	1.81	0.97	1.2
	Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)	Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)	Fagus woodland	10-20	27.8	20.9	23	Site specific	1.81	0.97	1.2

Appendix E

BACKGROUND CONCENTRATIONS OF NOX

Habitats Site	X	Y	Estimated annual mean NO_X Concentrations in 2020
South West London Waterbodies SPA	502500	175500	23.3
South West London Waterbodies SPA	502500	174500	25.0
South West London Waterbodies SPA	502500	173500	33.4
South West London Waterbodies SPA	501500	174500	20.1
South West London Waterbodies SPA	501500	173500	23.1
South West London Waterbodies SPA	500500	175500	20.7
South West London Waterbodies SPA	500500	174500	19.3
South West London Waterbodies SPA	500500	173500	21.2
South West London Waterbodies SPA	503500	175500	48.7
South West London Waterbodies SPA	503500	174500	35.9
South West London Waterbodies SPA	503500	173500	26.5
South West London Waterbodies SPA	503500	172500	28.3
South West London Waterbodies SPA	504500	174500	32.7
South West London Waterbodies SPA	504500	173500	27.4
South West London Waterbodies SPA	504500	172500	27.2
South West London Waterbodies SPA	505500	174500	54.6
South West London Waterbodies SPA	505500	173500	30.8

Habitats Site	X	Y	Estimated annual mean NO_X Concentrations in 2020
South West London Waterbodies SPA	505500	172500	27.2
South West London Waterbodies SPA	506500	172500	28.4
South West London Waterbodies SPA	502500	168500	23.8
South West London Waterbodies SPA	502500	167500	32.4
South West London Waterbodies SPA	503500	168500	22.2
South West London Waterbodies SPA	503500	167500	27.1
South West London Waterbodies SPA	511500	170500	23.6
South West London Waterbodies SPA	512500	170500	23.0
South West London Waterbodies SPA	511500	168500	21.8
South West London Waterbodies SPA	511500	167500	20.7
South West London Waterbodies SPA	512500	168500	22.3
South West London Waterbodies SPA	512500	167500	21.2
Richmond Park SAC	518500	174500	29.3
Richmond Park SAC	518500	173500	24.6
Richmond Park SAC	518500	172500	22.9
Richmond Park SAC	518500	171500	24.1
Richmond Park SAC	519500	174500	24.7

Habitats Site	X	Y	Estimated annual mean NO_X Concentrations in 2020
Richmond Park SAC	519500	173500	22.5
Richmond Park SAC	519500	172500	21.9
Richmond Park SAC	519500	171500	22.6
Richmond Park SAC	519500	170500	26.1
Richmond Park SAC	520500	174500	24.6
Richmond Park SAC	520500	173500	22.4
Richmond Park SAC	520500	172500	22.4
Richmond Park SAC	520500	171500	24.7
Richmond Park SAC	521500	174500	23.6
Richmond Park SAC	521500	173500	23.6
Richmond Park SAC	521500	172500	27.7
Wimbledon Common SAC	521500	171500	26.8
Wimbledon Common SAC	521500	170500	27.7
Windsor Forest and Great Park SAC	491500	174500	14.4
Windsor Forest and Great Park SAC	492500	173500	14.9
Windsor Forest and Great Park SAC	493500	171500	16.3
Windsor Forest and Great Park SAC	493500	170500	15.3

Habitats Site	X	Y	Estimated annual mean NO_X Concentrations in 2020
Windsor Forest and Great Park SAC	493500	174500	14.9
Windsor Forest and Great Park SAC	493500	173500	14.0
Windsor Forest and Great Park SAC	493500	172500	15.1
Windsor Forest and Great Park SAC	493500	171500	16.3
Windsor Forest and Great Park SAC	493500	170500	15.3
Windsor Forest and Great Park SAC	494500	170500	15.2
Windsor Forest and Great Park SAC	494500	171500	15.1
Windsor Forest and Great Park SAC	494500	172500	15.9
Windsor Forest and Great Park SAC	494500	173500	14.2
Windsor Forest and Great Park SAC	494500	174500	14.9
Windsor Forest and Great Park SAC	494500	175500	16.8
Windsor Forest and Great Park SAC	495500	168500	15.4
Windsor Forest and Great Park SAC	495500	169500	15.6
Windsor Forest and Great Park SAC	495500	170500	15.2
Windsor Forest and Great Park SAC	495500	171500	15.2
Windsor Forest and Great Park SAC	495500	172500	15.5
Windsor Forest and Great Park SAC	495500	173500	16.3

Habitats Site	X	Y	Estimated annual mean NO_X Concentrations in 2020
Windsor Forest and Great Park SAC	495500	174500	15.1
Windsor Forest and Great Park SAC	495500	175500	17.1
Windsor Forest and Great Park SAC	496500	168500	15.6
Windsor Forest and Great Park SAC	496500	169500	15.9
Windsor Forest and Great Park SAC	496500	170500	15.6
Windsor Forest and Great Park SAC	496500	171500	15.6
Windsor Forest and Great Park SAC	496500	172500	15.7
Windsor Forest and Great Park SAC	496500	173500	16.0
Windsor Forest and Great Park SAC	496500	174500	15.8
Windsor Forest and Great Park SAC	496500	175500	18.8
Windsor Forest and Great Park SAC	497500	168500	16.5
Windsor Forest and Great Park SAC	497500	169500	15.3
Windsor Forest and Great Park SAC	497500	171500	15.0
Windsor Forest and Great Park SAC	497500	172500	16.4
Windsor Forest and Great Park SAC	497500	173500	16.7
Windsor Forest and Great Park SAC	498500	173500	16.9
Windsor Forest and Great Park SAC	498500	172500	16.3

Habitats Site	X	Y	Estimated annual mean NO_X Concentrations in 2020
Windsor Forest and Great Park SAC	497500	174500	17.4
Windsor Forest and Great Park SAC	491500	175500	14.7
Windsor Forest and Great Park SAC	492500	175500	15.2
Windsor Forest and Great Park SAC	492500	174500	14.9
Windsor Forest and Great Park SAC	493500	174500	14.9
Windsor Forest and Great Park SAC	493500	173500	14.0
Windsor Forest and Great Park SAC	493500	172500	15.1
Windsor Forest and Great Park SAC	494500	169500	14.7
Thursley, Ash, Pirbright and Chobham SAC	506500	159500	25.9
Thursley, Ash, Pirbright and Chobham SAC	506500	158500	17.6
Thursley, Ash, Pirbright and Chobham SAC	507500	159500	29.8
Thursley, Ash, Pirbright and Chobham SAC	507500	158500	24.5
Thursley, Ash, Pirbright and Chobham SAC	508500	159500	30.8
Thursley, Ash, Pirbright and Chobham SAC	509500	158500	24.1
Thursley, Ash, Pirbright and Chobham SAC	508500	158500	20.9
Thursley, Ash, Pirbright and Chobham SAC	507500	157500	16.1
Thursley, Ash, Pirbright and Chobham SAC	506500	159500	25.9

Habitats Site	X	Y	Estimated annual mean NO_X Concentrations in 2020
Thursley, Ash, Pirbright and Chobham SAC	506500	158500	17.6
Thursley, Ash, Pirbright and Chobham SAC	506500	157500	23.4
Thursley, Ash, Pirbright and Chobham SAC	498500	160500	14.7
Thursley, Ash, Pirbright and Chobham SAC	498500	159500	15.2
Thursley, Ash, Pirbright and Chobham SAC	499500	160500	15.7
Thursley, Ash, Pirbright and Chobham SAC	500500	161500	14.9
Thursley, Ash, Pirbright and Chobham SAC	500500	160500	16.1
Thursley, Ash, Pirbright and Chobham SAC	501500	161500	19.8
Thursley, Ash, Pirbright and Chobham SAC	501500	160500	17.7
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	494500	165500	15.6
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	494500	164500	17.0
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	495500	166500	16.9
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	495500	165500	17.0
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	495500	164500	23.4
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	496500	166500	16.8
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	496500	165500	17.9
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	496500	164500	25.1

Habitats Site	X	Y	Estimated annual mean NO_X Concentrations in 2020
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	496500	163500	15.7
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	497500	166500	16.2
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	497500	165500	23.1
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	497500	164500	20.6
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	497500	163500	16.4
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	498500	165500	24.6
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	498500	164500	17.2
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	498500	163500	16.0
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	499500	164500	16.7
Thursley, Ash, Pirbright and Chobham SAC/Thames Basin Heaths SPA	499500	163500	16.0

Mountbatten House
Basing View
Basingstoke, Hampshire
RG21 4HJ

wsp.com