



The Planning Inspectorate
Yr Arolygiaeth Gynllunio

REPORT on the IMPLICATIONS for EUROPEAN SITES

Proposed M25 Junction 10/Wisley Interchange

An Examining Authority report prepared with the
support of the Environmental Services Team

Planning Inspectorate Reference: TR010030

09 April 2020

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1 INTRODUCTION

1.1 Background

- 1.1.1 Highways England (the Applicant) has applied to the Secretary of State for a development consent order (DCO) under section 37 of the Planning Act 2008 (PA2008) for the proposed M25 Junction 10/A3 Interchange (the application). The Secretary of State has appointed an Examining Authority (ExA) to conduct an examination of the application, to report its findings and conclusions, and to make a recommendation to the Secretary of State as to the decision to be made on the application.
- 1.1.2 The relevant Secretary of State is the competent authority for the purposes of the Habitats Directive¹ and the Habitats Regulations² for applications submitted under the PA2008 regime. The findings and conclusions on nature conservation issues reported by the ExA will assist the Secretary of State in performing their duties under the Habitats Regulations.
- 1.1.3 This report compiles, documents and signposts information provided within the DCO application, and the information submitted throughout the examination by both the Applicant and Interested Parties, up to Deadline 5a of the examination (13 March 2020) in relation to potential effects to European Sites³. It is not a standalone document and should be read in conjunction with the examination documents referred to. Where document references are presented in square brackets [] in the text of this report, that reference can be found in the Examination library published on the National Infrastructure Planning website at the following link:
<https://infrastructure.planninginspectorate.gov.uk/document/TR0100030-000272>
- 1.1.4 It is issued to ensure that Interested Parties including the relevant statutory nature conservation body (SNCB): Natural England (NE), are consulted formally on Habitats Regulations matters. This process may be relied on by the Secretary of State for the purposes of Regulation 63(3) of the Habitats Regulations. Following consultation, the responses will be considered by the ExA in making their recommendation to the Secretary of State and made available to the Secretary of State along with this report. The Report on the Implications for European Sites (RIES) will not be revised following consultation.
- 1.1.5 The Applicant has not identified any potential impacts on European sites in other EEA States⁴ in its Screening Report (5.3 Habitats Regulations

¹ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as codified) (the 'Habitats Directive').

² The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations).

³ The term European Sites in this context includes Sites of Community Importance (SCIs), Special Areas of Conservation (SACs) and candidate SACs, Special Protection Areas (SPAs), possible SACs, potential SPAs, Ramsar sites, proposed Ramsar sites, and any sites identified as compensatory measures for adverse effects on any of the above. For a full description of the designations to which the Habitats Regulations apply, and/ or are applied as a matter of Government policy, see PINS Advice Note 10.

⁴ European Economic Area (EEA) States.

Assessment Annex A) [APP-040], or within its Environmental Statement (ES) (6.3 ES Chapters 1-4) [APP-049]. Only UK European sites are addressed in this report.

1.2 Documents used to inform this RIES

- 1.2.1 The Applicant's DCO application concluded that there is the potential for likely significant effects (LSE) on Thames Basin Heaths SPA and therefore provided a Statement to inform appropriate assessment (SIAA) [APP-043]. The SIAA concluded that an adverse effect on the integrity of the SPA (for reasons discussed in Sections 2 and 4 of this RIES) **could not be excluded**. Therefore, the Applicant's DCO application also contains an assessment of alternative solutions, information to inform consideration of imperative reasons of overriding public interest (IROPI), and details of its proposed compensation measures [APP-044].
- 1.2.2 The report was provided together with supporting Annexes containing screening matrices [APP-040], integrity matrices [APP-043], and other supporting information including a suite of figures [APP-039], [AS-012]. To aid the reader, this RIES refers collectively to [APP-043] and its Annexes as the Applicant's 'HRA report' with specific references provided where necessary.

Pre-examination and examination

- 1.2.3 The Applicant submitted an updated version of Document 5.3 Habitats Regulations Assessment: Figures [AS-012] (Revision 1) and an updated Document 6.5 ES Appendix 7.19 SPA Management and Monitoring Plan (SPA MMP) Revision 1 [AS-015] in order to rectify information in response to advice from the Planning Inspectorate [PD-002]. Both of these documents were accepted into the Examination by the Examining Authority (ExA) prior to the start of Examination.
- 1.2.4 In response to the ExA's questions, the Applicant provided updated HRA screening matrices [REP2-003, REP2-024] to correct minor omissions/typographical errors (submitted to the ExA on 18 December 2019).
- 1.2.5 On 11 February 2020, at Deadline 4, the Applicant submitted a change request to the application, along with revised versions of the HRA report and SPA Management and Monitoring Plan. The change request was accepted by the ExA on 27 February 2020 (for Changes 2 to 6) [PD-012]. Change 1 has not been accepted by the ExA at the time of writing. The updated versions of the documents contain amendments to reflect the updated description of the Proposed Development.
- 1.2.6 Other documents have been updated in response to the examination timetable or errata. References within the RIES to documents contained in the examination library are for the relevant document version at that point in the examination, or where appropriate, the references for all versions of the documents are stated.
- 1.2.7 For those European sites and qualifying features where the Applicant's conclusions have been disputed or queried during the examination, the

integrity matrix has been updated by the ExA, with the support of the Planning Inspectorate's Environmental Services Team using the documents listed below. The revised matrix is included as Annex 1 to this report.

Application Documents and additional submissions

- Document 5.3 Habitats Regulations Assessment: Stage 2: Statement to inform appropriate assessment (SIAA) [APP-043], Revision 1 [REP4-018]
- Document 5.3 Habitats Regulations Assessment: Stage 3-5: Assessment of alternatives, consideration of imperative reasons of overriding public interest (IROPI) and compensatory measures [APP-044], Revision 1 [REP4-014].
- Document 5.3 Habitats Regulations Assessment: Annex A: Stage 1 Screening [APP-040], Revision 1 [REP2-003], Revision 2 [REP4-015].
- Document 9.29 Updated Screening Matrices 2 and 3 Habitat Regulations Assessment Appendix A [REP2-024]
- Document 5.3 Habitats Regulations Assessment: Annex B: Consultation report [APP-041], Revision 1 [REP4-016]
- Document 5.3 Habitats Regulations Assessment: Annex C: Selection of the suite of compensatory measures [APP-042], Revision 1 [REP4-017]
- Document 5.3 Habitats Regulations Assessment: Figures [APP-039], Revision 1 [AS-012], Revision 2 [REP4-043]
- Document 6.3 ES Chapters 1-4 [APP-049], Revision 1 [REP4-024]
- M25 junction 10/A3 Wisley interchange TR010030 6.5 ES Appendix 7.19 SPA Management and Monitoring Plan (SPA MMP) [APP-105], Revision 1 [AS-015], Revision 2 [REP4-031]
- M25 junction 10/A3 Wisley interchange TR010030 7.2 Outline Construction Environmental Management Plan (OCEMP) [APP-134], Revision 1 [AS-016] Revision 2 [REP4-033] Revision 3 [REP4a-003]
- M25 junction 10/A3 Wisley interchange TR010030 7.3 Register of Environmental Actions and Commitments [APP-135]

Representations (by deadline)

- Environment Agency (EA) relevant representation [RR-011]
- Natural England (NE) relevant representation [RR-020]
- The Royal Horticultural Society (RHS) relevant representation [RR-024]

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- The Royal Society for the Protection of Birds (RSPB) relevant representation [RR-026]
- Surrey Wildlife Trust (SWT) relevant representation [RR-027]

Deadline 1 (26 November 2019)

- Surrey County Council (SCC) written representation [REP1-018]
- RHS written representation [REP1-038]
- RHS Deadline 1 Submission - Air Quality Representation [REP1-041]
- RHS Deadline 1 Submission - Summary of Air Quality Representation [REP1-042]
- RHS Deadline 1 Submission - Ecology and Habitats Regulations Assessment Representation [REP1-043]
- The RSPB representation [REP1-045]

Deadline 2 (18 December 2019)

- Highways England 9.18 Applicant's Response to Written Questions [REP2-013]
- Highways England 9.19 Applicant's Comments on Written Representations [REP2-014]
- Highways England 9.27 Response to RHS Comments on Air Quality [REP2-022]
- Elmbridge Borough Council (EBC) Response to Examining Authority's First Written Questions Annex A [REP2-028]
- Guildford Borough Council (GBC) Response to Examining Authority's First Written Questions [REP2-032]
- NE response to the Examining Authority's First Written Questions and request for information [REP2-034]
- SCC Response to the Examining Authority's First Written Questions [REP2-045]
- The RSPB Response to the Examining Authority's First Written Questions [REP2-050]

Deadline 3 (28 January 2020)

- Highways England 9.33 Applicant's comments on IP responses to Examining Authority's First Written Questions [REP3-008]
- Highways England 9.34 Post-Hearing submissions including written summaries of oral case for Issue Specific Hearing 2 (ISH2) [REP3-009]

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- RHS - Appendix 2 - Ockham Roundabout - Comparison between RHS Alternative and DCO Scheme [REP3-049]
- RHS Appendix 3 RHS Response to REP2-022 [REP3-050]
- RSPB Response to Applicant's comments on Written Representations [REP3-060]

Deadline 4 (11 February 2020)

- Highways England 9.51 - Applicant's comments on RHS's Deadline 3 submission [REP4-005]
- Highways England 9.53 - Applicant's comments on RSPB's Deadline 3 submission [REP4-007]
- RHS Comments on any further information requested by the ExA for Deadline 3 [REP4-049]

Deadline 5 (3 March 2020)

- Highways England 9.58 - Applicant's Response to Examining Authority's Second Written Questions [REP5-014]
- Highways England 9.59 Response to RHS Deadline 4 submission [REP5-015]
- SCC Deadline 5 Submission - Annex A - Response to ExA's Written Questions (EXQ2) [REP5-029]
- NE Deadline 5 Submission - Response to Examining Authority's Second Written Questions [REP5-032]
- NE- Special Protection Area SPA2 Citation [REP5-033]
- NE – European Site Conservation Objectives: Supplementary Advice [REP5-034]
- NE- European Site Conservation Objectives for Thames Basin Heaths SPA [REP5-035]
- EBC Deadline 5 Submission - Response to Examining Authority's Second Written Questions [REP5-037]
- GBC Deadline 5 Submission - Response to Examining Authority's Second Written Questions [REP5-038]
- The RSPB Deadline 5 Submission - Response to Examining Authority's Second Written Questions [REP5-043]
- RHS Deadline 5 Submission - Appendix D Ammonia from Roads for Habitats Assessments [REP5-049]
- RHS Response to Examining Authority's Second Written Questions [REP5-054]

Statements of Common Ground

- Highways England 8.2 Statement of Common Ground with NE [APP-138], [REP3-002] Revision 1, [REP5-003] Revision 2
- Highways England 9.35 (1) - Statement of Common Ground with EBC [REP3-010], [REP5-007] Revision 1
- Highways England 9.36 (1) - Statement of Common Ground with GBC [REP3-011], [REP5-008] Revision 1
- Highways England 9.37 (1) - Statement of Common Ground with SCC [REP3-012], [REP5-009] Revision 1
- Highways England SoCG with the RHS submitted at Deadline 3 [REP3-013] and Deadline 5 [REP5-010]
- Highways England 8.3 (2) - Statement of Common Ground with EA [APP-139], [REP3-003] Revision 1, [REP5-004] Revision 2

Hearing Documents

- Recording of Issue Specific Hearing 2 (ISH2) on transportation, environmental and socio-economic matters – 15-16th January 2020 [EV-005a-d]
- Action Points from Issue Specific Hearing 2 [EV-005e]

Other Documents

- Section 51 Advice to the Applicant [PD-002]
- The Examining Authority's Written Questions (WQ) [PDD-006]
- The Examining Authority's Further Written Questions (FWQ) [PD-010]
- Notification of Procedural Decision – Rule 9 [PD-012]
- Highways England 3.1 draft Development Consent Order (DCO) [APP-018], [REP2-002] (Revision 1 and [REP5-002] (Revision 2).
- Highways England Cover letter regarding changes to an accepted DCO [REP4-013]

1.3 Structure of this RIES

1.3.1 The remainder of this report is as follows:

- **Section 2** provides an overview of the European site(s) that have been considered within the DCO application and during the examination period, up to 13 March 2020 (Deadline 5a). It provides an overview of the issues that have emerged during the examination.

- **Section 3** identifies the European site(s) and qualifying feature(s) screened by the Applicant for potential LSE, either alone or in-combination with other plans and projects. The section also identifies where Interested Parties have disputed the Applicant's conclusions, together with any additional European sites and qualifying features screened for potential LSE during the examination.
- **Section 4** identifies the European site(s) and qualifying feature(s) which have been considered in terms of adverse effects on site integrity, either alone or in-combination with other plans and projects. The section identifies where Interested Parties have disputed the Applicant's conclusions, together with any additional European sites and qualifying features considered for adverse effects on integrity during the examination.
- **Annex 1** comprises a matrix for the qualifying feature(s) for which the Applicant's conclusions were disputed in relation to potential adverse effects on the integrity of Thames Basin Heaths SPA. It summarises the evidence submitted by the Applicant and Interested Parties up to 13 March 2020.

2 OVERVIEW

2.1 European Sites Considered

- 2.1.1 The project is not connected with or necessary to the management for nature conservation of any of the European sites considered within the Applicant's assessment (Paragraph 1.3.1, [APP-040]).
- 2.1.2 The Applicant's HRA Report identified three European sites (and their features) for which the UK is responsible for inclusion within the screening assessment. Tables 1 to 3 of the HRA Report provides summaries of these three sites and list their qualifying features and non-qualifying features of interest. The sites identified are:

Table 2.1: Sites Screened into the HRA by Applicant

Name of European Site	Features
Thames Basin Heaths Special Protection Area (SPA) (Proposed Development is within this site)	Breeding Dartford warbler (<i>Sylvia undata</i>)
	Breeding European nightjar (<i>Caprimulgus europaeus</i>)
	Breeding woodlark (<i>Lullula arborea</i>)
Mole Gap to Reigate Escarpment Special Area of Conservation (SAC) (6.9km south-east of Proposed Development)	<p>Annex 1 habitats that are a primary reason for selection of this site:</p> <ul style="list-style-type: none"> • Stable xerothermophilous formations with <i>Buxus sempervirens</i> on rock slopes; • Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (important orchid sites); and • <i>Taxus baccata</i> woods of the British Isles (Yew-dominated woodland).
	<p>Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:</p> <ul style="list-style-type: none"> • European dry heaths; and • <i>Asperulo-Fagetum</i> beech forests.
	<p>Annex II species present as a qualifying feature, but not a primary reason for site selection:</p> <ul style="list-style-type: none"> • Great crested newt <i>Triturus cristatus</i>; and • Bechstein's bat <i>Myotis bechsteinii</i>.
Ebernoe Common SAC	<p>Annex I habitats that are a primary reason for selection of this site:</p>

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(29.3km south-west of Proposed Development)	<ul style="list-style-type: none"> • Atlantic acidophilous beech forests with <i>Ilex</i> and sometimes also <i>Taxus</i> in the shrub layer (<i>Quercion robori-petraeae</i> or <i>Ilici-Fagenion</i>).
	<p>Annex II species that are a primary reason for selection of this site:</p> <ul style="list-style-type: none"> • Barbastelle bat (<i>Barbastella barbastellus</i>); and • Bechstein`s bat (<i>Myotis bechsteinii</i>).

- 2.1.3 Annex A [APP-040] explains that the screening exercise has been based on the guidance within Volume 11 of the Design Manual for Roads and Bridges (DMRB) which advises that consideration should be given to effects on European sites where:
- the European site is within 2km of the proposed development, or 30km if a SAC (or pSAC or cSAC) where bats are a qualifying feature; or
 - the proposed development crosses adjacent a watercourse designated as a European site; or
 - the European site lies within 200m of the affected road network (ARN) associated with emissions.
- 2.1.4 Paragraph 2.2.1 refers to the Planning Inspectorate’s Advice Note 10 and lists the designations to be included as ‘European sites’ (see also footnote 4 on page 1 of this RIES).
- 2.1.5 The Applicant identified LSE on Thames Basin Heaths SPA in relation to habitat loss, both permanent and temporary), habitat degradation by changes in air quality, hydrology, and the spread of non-native invasive species (INNS), and disturbance by changes in noise, recreational use and lighting. These LSE have been identified from the project alone, although the assessment in [APP-040] considers in-combination effects arising from local plan HRAs (discussed further in Section 3).
- 2.1.6 The Applicant concludes no LSE either from the Proposed Development alone or in-combination for both Mole Gap to Reigate Escarpment SAC and Ebernoe Common SAC and provides evidence for these conclusions. This is discussed further in Section 3.
- 2.1.7 Appendix C of Annex A [APP-40] states that Natural England (NE), the Royal Society for the Protection of Birds (RSPB), and Surrey Wildlife Trust (SWT) did not have any comment to make on the sites included and provides evidence in this regard. The submitted Statement of Common Ground with NE [APP-138 and REP5-003] records agreement on the conclusions of the screening assessment.
- 2.1.8 The Applicant’s SIAA [APP-043, and REP4-018] has concluded that adverse effects on integrity on the qualifying features of Thames Basin Heaths SPA (breeding Dartford Warbler, European nightjar and woodlark) cannot be excluded in relation to habitat loss (both permanent and

temporary) from the Proposed Development alone. The SIAA [APP-043] concludes that adverse effects on integrity will not arise from habitat degradation by changes in air quality, hydrology, the spread of non-native invasive plant species, disturbance by changes in noise, recreational use and/or lighting.

- 2.1.9 In light of this conclusion, the Applicant has submitted an assessment of alternative solutions, a case for IROPI, and proposed compensation measures, and this information is provided in [APP-044]. The selection of the chosen proposed compensation measures is described in Annex C to the SIAA, [APP-042]. The Applicant has also submitted a draft SPA MMP [APP-105, AS-015, and REP4-031] (see Section 4, below).
- 2.1.10 Evidence is presented in Annex B [APP-041] (Table 1.1) of agreement with NE on the sites and potential impacts to be included in the assessment. No other Interested Parties identified any other sites that could be affected. NE states in its relevant representation and in Document 8.2 Statement of Common Ground with NE [APP-138 and subsequent revisions] that it is in agreement with the conclusions of the SIAA.

2.2 HRA Matters Considered During the Examination

- 2.2.1 HRA Matters which were the subject of representations from Interested Parties, and matters which were addressed through ExA written questions (WQ and FWQ) and/or at Issue Specific Hearings (ISH) were:
- Air quality effects (from operational roads traffic) on Thames Basin Heaths SPA;
 - Delivery of the SPA MMP and delivery of the proposed suite of compensation measures;
 - Mitigation measures taken into account in the SIAA;
 - The assessment of recreational disturbance effects on Thames Basin Heaths SPA;
 - The consideration of alternative solutions;
 - The justifications put forward by the Applicant within its case for IROPI.

A detailed account of the examination of these matters is set out in Section 4 below.

In addition, other matters which were addressed were:

- INNS data supporting the Applicant's HRA;
- Bat survey data supporting the Applicant's HRA screening; and
- The scope of the in-combination assessment;

A detailed account of the examination of these matters is set out in Section 3 below.

3 LIKELY SIGNIFICANT EFFECTS

Methodology and approach

- 3.0.1 The Applicant has described how it has determined what would constitute a 'significant effect' within its HRA report [APP-040], Section 5]. The approach is based on the identification of impact pathways having regard to the characteristics of the Proposed Development, and information about the conservation objectives and vulnerabilities of the sites identified. The use of professional judgment in determining impact-receptor-effect pathways is also acknowledged in the HRA report.
- 3.0.2 Although it is not stated in the Applicant's HRA report, the approach adopted appears to follow the EC guidance on habitats assessment (EC Guidance document: 'Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2018)' and EC Guidance document: 'Assessment of plans and projects significantly affecting Natura 2000 sites (2001)').
- 3.0.3 The Applicant's determination of which sites to include in the screening for LSE is summarised in Paragraph 2.1.3 above. Paragraph 5.1.1 of [APP-040] lists the impact pathways considered:
- habitat loss and fragmentation;
 - changes to water quality;
 - disturbance from recreation;
 - changes to noise;
 - changes to lighting;
 - changes to air quality; and
 - habitat degradation from the spread of non-native invasive plant species (Thames Basin Heaths SPA only).
- 3.0.4 The Applicant's screening matrices are presented as Appendix B of [APP-040], updated as [REP2-024] and [REP4-015].
- 3.0.5 The Applicant has addressed potential in-combination effects within its HRA report ([APP-040], Section 4). Tables 5,6, and 7 summarise the in-combination assessment for each European site. The in-combination assessment carried out by the Applicant focussed on Local Plan HRAs for local authorities within 10km of the Proposed Development, listed in Paragraph 4.1.1 on the basis of advice from NE.
- Elmbridge Borough Council
 - Guildford Borough Council
 - Mole Valley District Council
 - Runnymede Borough Council
 - Spelthorne Borough Council

- Surrey Heath Borough Council
- Woking Borough Council

3.0.6 Paragraph 2.5.5 [APP-040] states that the Applicant agreed with NE that the in-combination assessment should focus on the Ockham and Wisley Commons SSSI component of the Thames Basin Heaths SPA, due to the distances between the Proposed Development and the other SSSI components and the lack of hydrological connectivity to other SSSI components.

3.0.7 The approach is presented in [APP-040] but has also been applied to the assessment of adverse effects on integrity (Section 4, below) in [APP-043]. The need for in-combination assessment to identify LSE was advised by NE to not be required due to the outcomes of the assessments as described in Paragraph 3.0.11 of this RIES for the two SACs considered and Paragraph 3.0.15 of this RIES in relation to Thames Basin Heaths SPA, see below.

LSE assessment outcomes

3.0.8 The Applicant's screening assessment [APP-040] concluded that the Proposed Development would have **no likely significant effects**, either alone or in-combination with other plans or projects, on the qualifying features of the European site(s) listed below (see Table 3.1 below)

- Mole Gap to Reigate Escarpment SAC (Matrix 2, Appendix B, [APP-040] and [REP2-024])
- Ebernoe Common SAC (Matrix 3, Appendix B, [APP-040] and [REP2-024])

3.0.9 LSE on the habitat features of the SACs were excluded due to the fact that no habitats will be directly affected (lost) and that their distances from and positions in relation to the Proposed Development mean that no pathways exist for air quality, hydrological effects, or disturbance effects. The same reasoning is applied to excluding LSE on great crested newts, a feature of Mole Gap to Reigate Escarpment SAC.

3.0.10 With regard to the Bechstein's bat populations for both sites, and the barbastelle bat population which is a feature of Ebernoe Common SAC, evidence is provided that these species are unlikely to use habitats within and around the Proposed Development for foraging, and reference is made to their absence from the surveys of the Proposed Development. Only summary information on these surveys is provided in [APP-040, Tables 6 and 7 in Section 5, and Appendix B], with no reference to any document(s) containing the detail on the study area and survey effort applied and the results obtained. This was requested by the ExA through Written Questions [PD-006, WQ 1.4.10] and was provided by the Applicant in its response at Deadline 2 [REP2-013].

3.0.11 With regards to in-combination effects on the SACs, the matrices and assessment (Tables 6 and 7, [APP-040]) state that no impacts from any element of the Proposed Development are predicted and therefore no

cumulative effects as a result of combination with other developments/projects are anticipated.

- 3.0.12 As a result of the screening assessment, the Applicant concluded that the project is **likely to give rise to significant effects**, from the Proposed Development alone, on the qualifying features of:
- Thames Basin Heaths SPA (Matrix 1, Appendix B, [APP-040])
- 3.0.13 LSE are identified against all of the impact pathways listed in Paragraph 3.0.3 above. Appendix B, Paragraph B.1.3 states that habitat degradation from the spread of INNS has been considered in Matrix 1, however it is not specifically addressed in the matrix. The assessment presented in Table 5 in [APP-040] does, however, identify this as a likely significant effect. The ExA requested information through WQ 1.4.1 [PD-006] on the data used to support the assessment of LSE from the spread of invasive non-native species. This information was provided by the Applicant in its response in [REP2-013].
- 3.0.14 Evidence is presented of agreement with NE regarding the outcomes of the draft screening exercise for Thames Basin Heaths SPA (Table 1.2, Annex B, 16th March 2018 site meeting [APP-041]) and its agreement is recorded in the SoCG [APP-138 and REP5-003].
- 3.0.15 With regard to in-combination effects on Thames Basin Heaths SPA, these are discussed in Table 5 [APP-040]. It is recorded in the pre-application meeting notes at Annex B of the HRA report [APP-041], Tables 1.1 2nd row and Table 1.2 that NE did not consider an in-combination assessment to be required as LSE were identified from the project alone for all potential impacts considered. However, the in-combination assessment reported in Table 5 appears to have been undertaken on a precautionary basis. The RSPB is recorded in one of these notes (March 2018) as considering that an in-combination assessment would be important with particular emphasis on recreational pressure. This advice was taken forward in the assessment of adverse effects on integrity (see Section 4, below).
- 3.0.16 The Applicant's conclusions of potential LSE on those European sites and their qualifying features in Table 3.1 **were not disputed** by any Interested Parties during the examination.

3.1 Summary of HRA Screening outcomes during the examination

- 3.1.1 The Applicant concluded LSE on one European site, Thames Basin Heaths SPA (all qualifying features: breeding Dartford warbler, European nightjar, and woodlark) (Table 3.1), from the Proposed Development alone. Specifically, LSE were identified from:
- supporting habitat loss during construction;
 - disturbance to qualifying bird species from noise, lighting, and recreational use during construction and operation;

- supporting habitat degradation from water quality changes during construction and operation;
- supporting habitat degradation from air quality effects during construction and operation; and
- supporting habitat degradation from the spread of INNS.

3.1.2 LSE in-combination were also identified for all qualifying features from all impact pathways listed above.

3.1.3 The Interested Parties did not dispute the Applicant's conclusions. Further assessment and evidence with respect to this site and its features and potential effects on integrity are discussed in Section 4.

Table 3.1: The Applicant's screening exercise and degree of agreement reached with the SNCB and other relevant parties

Features	Screening result*: LSE alone or in combination?	Agreed with SCNB and other relevant parties?	Assessment of effects on integrity required?	Agreed with SNCB and other relevant parties?
<u>Thames Basin Heaths Special Protection Area (SPA)</u>				
Breeding Dartford warbler	Yes [APP-040]	Yes [APP-040, APP-138, RR-020]	Yes [APP-040]	Yes [APP-040, APP-138, RR-020]
Breeding European nightjar	Yes [APP-040]	Yes [APP-040, APP-138, RR-020]	Yes [APP-040]	Yes [APP-040, APP-138, RR-020]
Breeding woodlark	Yes [APP-040]	Yes [APP-040, APP-138, RR-020]	Yes [APP-040]	Yes [APP-040, APP-138, RR-020]
<u>Mole Gap to Reigate Escarpment Special Area of Conservation (SAC)</u>				
Stable xerothermophilous formations with <i>Buxus sempervirens</i> on rock slopes	No [APP-040]	Yes [APP-040, RR-020]	No [APP-040]	Yes [APP-040, APP-138, RR-020]
Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (important orchid sites)	No [APP-040]	Yes [APP-040, RR-020]	No [APP-040]	Yes [APP-040, APP-138, RR-020]
<i>Taxus baccata</i> woods of the British Isles. (Yew-dominated woodland)	No [APP-040]	Yes [APP-040, APP-138, RR-020]	No [APP-040]	Yes [APP-040, APP-138, RR-020]
European dry heaths	No [APP-040]	Yes [APP-040, APP-138, RR-020]	No [APP-040]	Yes [APP-040, APP-138, RR-020]

Features	Screening result*: LSE alone or in combination?	Agreed with SCNB and other relevant parties?	Assessment of effects on integrity required?	Agreed with SNCB and other relevant parties?
Atlantic acidophilous beech forests with Ilex and sometimes also <i>Taxus</i> in the shrub layer (<i>Quercion robori-petraeae</i> or <i>IliciFagenion</i>)	No [APP-040]	Yes [APP-040, APP-138, RR-020]	No [APP-040]	Yes [APP-040, APP-138, RR-020]
Great crested newt <i>Triturus cristatus</i>	No [APP-040]	Yes [APP-040, APP-138, RR-020]	No [APP-040]	Yes [APP-040, APP-138, RR-020]
Bechstein's bat <i>Myotis bechsteinii</i>	No [APP-040]	Yes [APP-040, APP-138, RR-020]	No [APP-040]	Yes [APP-040, APP-138, RR-020]
<u>Ebernoe Common SAC</u>				
Atlantic acidophilous beech forests	No [APP-040]	Yes [APP-040, APP-138, RR-020]	No [APP-040]	Yes [APP-040, APP-138, RR-020]
Barbastelle bat (<i>Barbastella barbastellus</i>)	No [APP-040]	Yes [APP-040, APP-138, RR-020]	No [APP-040]	Yes [APP-040, APP-138, RR-020]
Bechstein`s bat	No [APP-040]	Yes [APP-040, APP-138, RR-020]	No [APP-040]	Yes [APP-040, APP-138, RR-020]

*From Applicant's HRA report and screening matrices [APP-040].

4 ADVERSE EFFECTS ON INTEGRITY

4.1 Conservation Objectives

- 4.1.1 The conservation objectives for all of the European sites taken forward to Appropriate Assessment and discussed in this section of the report were provided by the Applicant with its DCO application (Section 4.4, [APP-043] which also presents relevant information from NE supplementary advice on conserving and restoring the site features of Thames Basin Heaths SPA. Paragraph 4.45 of [APP-043] describes the SWT objectives for the Ockham and Wisley Commons SSSI component and Paragraph 4.5.6 describes how the baseline estimates compare to this. All three populations of the qualifying species are stated as having increased since the 2003-2007 period on which the SWT objectives were established and are at or over the mean numbers required to achieve favourable conservation status.
- 4.1.2 In response to the ExA's FWQ 2.4.6 [PD-010] NE submitted full copies of the citation [REP5-033], the conservation objectives [REP5-035], and the conservation objectives supplementary advice for Thames Basin Heaths SPA [REP5-034] into the examination at Deadline 5.

In-combination assessment

- 4.1.3 In its first WQs [PD-006], (WQ 1.4.3) the ExA asked the relevant local authorities if any other plans or projects should be included in the assessment. Elmbridge Borough Council (EBC) provided a response in [REP2-028] advising that future redevelopment plans around Cobham should be taken into account in the HRA. Responses from Guildford Borough Council [REP2-032] and Surrey County Council [REP2-045] refer to one expected residential application and one received application. The Applicant's response to this representation at Deadline 3 [REP3-008] confirmed the scope of the in-combination assessment in relation to these points. The SoCG submitted at Deadline 5 with EBC [REP5-007] records agreement on the scope. The SoCGs with SCC [REP5-009] and GBC [REP5-008] record no further comment.
- 4.1.4 Evidence was submitted in [APP-138] that discussions with NE were ongoing around inclusion of the proposed Heathrow Expansion in the in-combination assessment. The ExA explored this through WQ 1.4.2 and the Applicant and NE provided responses in [REP2-013] and [REP2-034] respectively. The SoCG submitted at Deadline 3 [REP3-002] confirms that agreement had been reached to exclude the proposed Heathrow Expansion from the in-combination traffic effects assessment due to the information available about this proposal, and that NE were satisfied with the in-combination assessment. The SoCG with NE submitted at Deadline 5 [REP5-003] also states agreement that the spatial scope of the in-combination assessment is appropriate and NE's satisfaction with the approach taken. Refer to Paragraphs 3.0.5 to 3.0.7 above for the scope of the assessment.
- 4.1.5 In its written representation [REP1-041] and at Deadline 3 in [REP3-047] the RHS (at Wisley Garden) attest that it does not consider the in-

combination assessment with respect to air quality effects to be adequate. The Applicant provided an initial response in [REP2-022] explaining the scope of the in-combination assessment with reference to [APP-041]. The RHS restated this position in [REP3-050] providing further detail on the deficiencies it considers to be present. The Applicant responded at Deadline 4 [REP4-005] (in particular Page 57) addressing the points made. This matter remains in dispute and is recorded as such in the SoCG between the parties submitted at Deadline 5 [REP5-010].

4.2 The Integrity Test: Potential for adverse effects on site integrity

Habitat loss during construction and operation

- 4.2.1 The assessment is presented in Section 7.2, Paragraphs 7.2.1 to 7.2.24 of the SIAA [APP-044 and REP4-018]. The SoCGs with NE submitted at application and Deadline 5 [REP5-003] state agreement with the findings of the assessment, that adverse effects on integrity due to habitat loss could not be excluded.
- 4.2.2 Following the change to the application accepted by the ExA on 11 February 2020 [PD-012] an additional 0.12 ha of temporary land-take from Thames Basin Heaths SPA was introduced to the Proposed Development to accommodate works associated with a gas main realignment (Work No 63 (e) and (f), [REP5-002]). The Applicant's assessment conclusions in [REP4-018] are unchanged, and no subsequent changes to the compensation and enhancement measures are proposed (see 4.5 below). Paragraph 3.2.20 of [REP5-003] states that NE agrees with the Applicant's conclusions.
- 4.2.3 The change to the application (see Paragraph 1.2.5 in Section 1, above) includes a change to increase the width of the green element of the bridge from 10m to 25m. The change was notified in November 2019 before the formal request was made in [REP4-013]. The ExA explored the implications of the change for the conclusions of the Applicant's HRA report in WQ 1.4.4. The Applicant responded in [REP2-013] that the wider green element would require wider bridge ramps to be constructed, however no increase to the proposed DCO boundary would be required. As the SIAA had assumed all SPA habitat within the proposed DCO boundary would be temporarily or permanently lost the proposed change would not affect the conclusions of the SIAA. This proposed change to Cockcrow Bridge has not been accepted by the ExA at the time of writing.

Disturbance to qualifying features from noise, lighting, and recreational use during construction and operation

- 4.2.4 The Applicant's assessment is presented in Section 7.2, Paragraphs 7.2.67 to 7.2.118 of the SIAA [APP-044 and REP4-018]. The SoCG with NE submitted with the application [APP-138] stated that agreement had been reached and that adverse effects on integrity from disturbance from noise, lighting, and recreation could be excluded.

- 4.2.5 The ExA asked the Applicant in WQ 1.4.15 [PD-006] to confirm the parameters applicable to the proposed lighting features and environmental barriers used in the assessment of lighting and noise disturbance effects on SPA qualifying features. The Applicant provided a response in [REP2-013] which describes the parameters and design assumptions applied to these elements for the purposes of assessment. The embedded mitigation measures are stated as secured by the OCEMP [AS-016].
- 4.2.6 The Applicant's HRA report [APP-043, footnote 4 Section 3] states that proposals for a green bridge element (which is the subject of a separate designated funds application) as part of the proposed new Cockcrow bridge are not intended as mitigation for recreational disturbance effects on the SPA. The ExA explored this through WQ 1.4.4 and 1.4.32 [PD-006]. The Applicant confirmed [REP2-013] that the green element is not required to mitigate any effects of the Proposed Development on the SPA, and if not included the conclusions of the SIAA would be unchanged.
- 4.2.7 With reference to information provided by the Applicant in [REP-014] and [REP4-007] where the Applicant stated that recreational activity in the heathland of the SPA was not anticipated to increase as a result of the Proposed Development, the ExA asked a FWQ 2.4.12 inviting further justification and a plan of public access point to the SPA. The Applicant provided a response in [REP5-014] detailing the public access to be provided under the proposals, stating that overall access points into the SPA would be reduced while additional access to areas outside of the SPA would be provided. In the SoCG with NE submitted at Deadline 5 [REP5-003], NE is recorded as being in agreement with the Applicant that no adverse effects on integrity would result from recreational disturbance as a result of the Proposed Development.

Degradation of supporting habitat from water quality changes during construction and operation

- 4.2.8 The assessment is presented in Section 7.2, Paragraphs 7.2.53 to 7.2.66 of the SIAA [APP-044, REP4-018]. The SoCG with NE submitted with the application [APP-138] stated that agreement had been reached regarding the absence of an adverse effects on integrity from changes in water quality.
- 4.2.9 The assessment places reliance on embedded mitigation measures (see 4.2.25 below) to avoid risks to surface water and ground water, including measures specifically aimed at the protection of Bolder Mere SSSI which lies within the Thames Basin Heaths SPA.
- 4.2.10 In its relevant representation [RR-011], the Environment Agency (EA) refers to the mitigation strategy and matters under discussion with the Applicant. The ExA explored this matter through WQ 1.4.17. In response the Applicant provided information in [REP2-013] and at Deadline 3 the EA provided a response in [REP3-026] stating agreement with the mitigation measures and that it considered them to be adequately secured (see 4.2.25 below). The SoCG with the EA submitted at Deadline 5 [REP5-004] provides a record of discussions held and sets out the position of the parties with respect to Bolder Mere in Section 3.3. The SoCG states

agreement with the package of mitigation and its mechanism for delivery, subject to matters to be agreed at the detailed design stage.

Degradation of supporting habitat from air quality effects during construction and operation

- 4.2.11 The assessment is presented in Section 7.2, Paragraphs 7.2.25 to 7.2.52 of the SIAA [APP-044, REP4-018]. The SoCG with NE submitted with the application [APP-138] stated that agreement had been reached that adverse effects on integrity from changes in air quality (both during construction and operation) could be excluded.
- 4.2.12 The SIAA [APP-043, Paragraph 7.2.48] states that total nitrogen deposition rates during operation are predicted to be below the current baseline levels, which is attributed to technological improvements in vehicle emissions. The ExA asked the Applicant to explain the certainty behind these assumptions in WQ 1.4.5. A response is provided by the Applicant in [REP2-013] explaining the source information on nitrogen deposition trends applied to the assessment, including the DEFRA Emissions Factors Toolkit, and acknowledgement of agreement with NE on the methodology applied. The Applicant provided a further response to the ExA's FWQ 2.1.2 [PD-010] in [REP5-014] regarding the Government's emerging position on the sale of vehicles which emit nitrogen oxides (NO_x), stating that the conclusions of the SIAA remain unchanged. The SoCG with NE submitted at Deadline 5 [Paragraph 3.2.8, REP5-003] reflects that NE agrees with the Applicant's approach.
- 4.2.13 Within its relevant representation [RR-024] the RHS states that air quality effects on Thames Basin Heaths SPA had not been properly assessed and dispute that an adverse effect on integrity from air quality effects due to operational traffic emissions can be excluded. Further representations were made by the RHS in this regard (see following paragraphs for details) on specific matters within the assessment. The ExA explored these issues through WQs [PD-006] and [PD-010] and at the ISH2 (15-16 January 2020) [EV-005d and EV-005e].

NO_x concentrations:

- 4.2.14 In its written representation [REP1-038], and with specific discussion in [REP1-041] and [REP1-042], the RHS expressed concern that the SIAA did not include values for NO_x concentrations despite this information being presented in the air quality assessment in the ES. This document also comments that future NO_x and NO₂ projections used in the air quality assessment in the ES were incorrectly calculated. The Applicant responded to these points in [REP2-014] and with further detail [REP2-022] stating that the SIAA methodology had been agreed with NE to concentrate on changes in nitrogen deposition rates against the critical load of the SPA habitat types. Further detail was presented by the Applicant providing the methodology used in the air quality assessment for future projection of NO_x concentrations. In the SoCG with the RHS submitted at Deadline 3 [REP3-013] the RHS states its agreement regarding the future projections of NO_x in the air quality assessment noting that it considers they have been calculated correctly but continues

to state the information should have been included in the SIAA. The SoCG with NE submitted at Deadline 5 [REP5-003] records agreement regarding the methodology within the SIAA.

- 4.2.15 The ExA explored the inclusion of NO_x concentrations through FWQ 2.3.1 addressed to the Applicant and 2.3.4 addressed to the RHS [PD-010]. The Applicant's response in [REP5-014] refers to its previously submitted justifications that the agreed methodology with NE, based on DMRB LA105 air quality guidance, does not require NO_x concentration changes screening but focuses on nitrogen deposition. Nevertheless, this screening was carried out to inform the ES (reference is made to [APP-080]) and the Applicant reproduces the modelled concentrations relevant to the Thames Basin Heaths SPA receptor points on Pages 10 and 11 of [REP5-014].
- 4.2.16 In response to FWQ 2.34, the RHS refers to NO_x concentrations presented in [APP-050], Table 5.7.10 and comments that many locations record an exceedance of the 30ug/m³ critical level. This matter is not recorded in the SoCG with RHS submitted at Deadline 5 [REP5-010].

Assessment of ammonia emissions:

- 4.2.17 In [REP1-041] and [REP1-042] the RHS comments that the SIAA had not assessed effects of air quality changes correctly because it did not include an assessment of the contribution of increased ammonia concentrations from operational traffic. This matter was addressed by the Applicant in [REP2-014] and in [REP3-009] where it provided justification why ammonia was not assessed with reference to the use of DMRB guidance and the DEFRA Emissions Toolkit. The Applicant also provided an estimation of the outcomes if ammonia were taken into account by doubling the calculated nitrogen deposition rates and concluded that the outcomes of the assessment would not be affected. The ExA asked the Applicant in FWQ 2.3.3 to explain how robust this estimation is, to which the Applicant provided a response in [REP5-014] explaining its rationale with discussion of the likely ammonia emissions from road traffic and the effects on the SIAA. This response restates its position that ammonia would be unlikely to have a discernible effect on nitrogen deposition rates within Thames Basin Heaths SPA.
- 4.2.18 The RHS restated its position in [REP3-043] its oral case summary presented at ISH2. The ExA explored this matter through FWQ 2.3.2 [PD-010] to which the RHS restated its position with reference to recent research (submitted as Appendix D [REP5-049]) which supported its assertion of the importance of ammonia in calculating nitrogen deposition. In response to the ExA's FWQs 2.3.2 and 2.4.7 [PD-010] asking for NE's position on the importance of ammonia, NE indicates [REP5-032] that the Applicant has followed relevant guidance on the pollutants to assess relevant to the Proposed Development, and that it was satisfied that this matter had been addressed by the Applicant. NE state satisfaction that the Applicant had demonstrated adequately that even with the inclusion of ammonia deposition, there is no likely significant effect on the habitat features supporting the qualifying features of the SPA.

Nitrogen deposition velocities

4.2.19 In [REP1-042] the RHS comment that the SIAA had not applied the most up to date guidance from the Institute of Air Quality Management (IAQM) on nitrogen deposition velocities provided by AQTAG to the air quality effects assessment. The Applicant responded to this point in [REP2-014] and in more detail in [REP2-022] providing updated nitrogen deposition calculations in Appendix B based on DMRB LA105 which had been revised to recommend the use of the AQTAG deposition velocities. The Applicant concludes that while the revised nitrogen deposition rates are higher (provided in Appendix B to REP2-022) they are not expected to affect heathland habitats and will not cause an adverse effect on the qualifying features of the SPA. The SoCG between the Applicant and the RHS submitted at Deadline 5 [REP5-010] states agreement on the velocities used and the SoCG with NE [REP5-003] states that agreement has been reached regarding the updated nitrogen deposition rates and the conclusion of no adverse effects on integrity of Thames Basin Heaths SPA.

Effects to the woodland buffer and changes to heathland distribution

4.2.20 At Deadline 3 in [REP3-043] the RHS raised the matter of air quality effects to the woodland buffer element of the SPA and contended that the Applicant's approach did not correctly address the requirements of the Habitats Regulations in this regard. The Applicant responded within [REP4-005] providing justification to support the conclusions reached in relation to the woodland buffer and the requirements of the Habitats Regulations. The RHS raised this matter again at Deadline 4 in [REP4-049] to which the Applicant responded at Deadline 5 [REP5-015], with reference to its Deadline 4 response.

4.2.21 The ExA explored this matter through FWQ 2.4.7 part (d) [PD-010] to which NE provided a response in [REP5-032] stating that its advice is to retain the woodland adjacent to the M25 and A3 as evidence exists that this habitat effectively disperses vehicle emissions away from sensitive habitats. NE's response also states that the achievement of favourable condition for the Ockham and Wisley Commons component of the Thames Basin Heaths is dependent on the improvement of the conditions of the existing heathland and not the expansion of heathland through large-scale felling of woodland. The SoCG with NE submitted by the Applicant at Deadline 5 [REP5-003] states that agreement has been reached that the woodland buffer may contribute to the invertebrate resource within the SPA but recognises that it does not support the qualifying bird species.

4.2.22 The SoCG with NE submitted by the Applicant at Deadline 5 [REP5-003] includes 'Appendix B. Technical Note: Air Quality Assessment' which provides further discussion and evidence in relation to the matters raised above under air quality effects.

Degradation of supporting habitat from the spread of INNS

4.2.23 The assessment is presented in Section 7.2, Paragraphs 7.2.119 to 7.2.120 of the SIAA [APP-044, REP4-018]. The SoCG with NE submitted with the application [APP-138] stated that agreement was in place confirming that adverse effects on integrity from the spread of INNS could be excluded.

4.2.24 In response to the ExA's WQ 1.4.1 [PD-006] the Applicant stated that adverse effects on integrity were excluded from the spread of INNS due to the mitigation measures to be secured in the approved CEMP and final Register of Environmental Actions and Commitments (REAC) which will form part of the CEMP [submitted as APP-135]. Specifically, the relevant mitigation measure is the proposed Precautionary Method for Working which is to be delivered through the approved CEMP as set out in dDCO Requirement 3 [REP5-002]. No concerns were raised on this matter by other Interested Parties.

Mitigation

4.2.25 Section 6 and Appendix D of [APP-043, and revisions] describe the mitigation measures embedded within the design of the Proposed Development. Table D.2 lists the measures specifically intended to avoid or reduce impacts on Thames Basin Heaths SPA. These measures are to be included and secured through the approved CEMP in line with the OCEMP [REP4a-003] and dDCO Requirement 3 [REP5-002].

4.2.26 The ExA explored the implications for the definition of 'commence' in Schedule 2 Part 1 of the dDCO for the activities to be controlled by the CEMP, through WQ 1.15.1 [PD-006], to which the Applicant responded in [REP2-013] with an explanation of its approach and a revised dDCO [REP2-002] reflecting the activities to be included within the definition and therefore to be controlled by the CEMP.

4.2.27 A FWQ was asked in [PD-010], 2.15.5, to the local authorities, NE, EA, RSPB and SWT to seek their opinion on what activities should be included in the definition of commence and therefore controlled by the CEMP. SCC provide a response in [REP5-029] stating that it considers that site clearance and temporary means of enclosure should be included in the definition and that the activities described by the dDCO as pre-construction ecological mitigation should be clarified. GBC state that site clearance and receipt and erection of construction plant and equipment should be included [REP5-038]. The RSPB express similar concerns in its response [REP5-043] and highlights the implications for the nature of the activities and their seasonal timing with respect to the SPA breeding bird populations. NE responded in [REP5-032] that it is satisfied because of the provisions of Thames Basin Heaths' SPA designation and that of Ockham and Wisley Commons SSSI, any works would be subject to its formal assent and therefore it considers sufficient protective measures to be in place.

4.2.28 The dDCO submitted at Deadline 5 [REP5-002] remains as previously submitted at Deadline 2 in this regard.

4.3 Summary of Integrity Test outcomes during the examination

4.3.1 The Applicant concluded that it has **not been possible to exclude adverse effects on the integrity** of Thames Basin Heaths SPA from temporary and permanent habitat loss. The Applicant's conclusions were

not disputed by any Interested Parties during the course of the examination for Thames Basin Heaths SPA (see Table 4.1 below).

- 4.3.2 The Applicant concluded that it was **possible to exclude adverse effects on the integrity** of Thames Basin Heaths SPA from disturbance to qualifying features and from effects on supporting habitat from changes to air quality, hydrology and the spread of INNS. The Applicant's conclusions in relation to the effects of air quality are disputed by the RHS. The Applicant's conclusions on the disturbance of qualifying features and effects on supporting habitat were not disputed by any other Interested Parties.

4.4 Alternative solutions and IROPI

- 4.4.1 The Applicant's assessment of alternative solutions to deliver the objectives of the Proposed Development ('alternatives') and case for imperative reasons of overriding public interest (IROPI) under the HRA process is presented in [APP-044]. In its relevant representation [RR-020] NE stated that it considered the assessment of alternatives to be properly considered and this position is again reflected in the SoCG submitted at Deadline 5 [REP5-003]. The RSPB also commented in its representation at Deadline 1 [REP1-045] that it considered alternative scheme designs to be fully assessed but highlighted the need for the absence of alternative solutions to be tested by the competent authority.
- 4.4.2 The ExA explored the assessment of alternatives through FWQ 2.4.9 [PD-010], and the Applicant's response is presented in [REP5-014].
- 4.4.3 The RHS has made representations throughout the examination regarding the 'RHS Alternative Scheme' which it describes in [REP1-044 and REP3-049]. It presents an argument that this scheme represents a less damaging alternative to the Proposed Development with respect to operational air quality effects on the SPA. In its written submission of case provided at the second ISH (15-16 January 2020) [REP3-009] the Applicant states in response to the RHS representations that the 'RHS Alternative Scheme' was considered as part of the option selection process. Information on this matter is also available in the Applicant's response to the ExA's FWQ 2.13.10 and 2.13.19 in [REP5-014].
- 4.4.4 Within this document and within [REP4-005] the Applicant also provides consideration of the RHS Alternative Scheme as a feasible alternative solution with regard to the requirements of the Habitats Regulations. Further information on this matter is available in the Applicant's responses to the ExA's FWQ 2.13.14, 2.13.15, and 2.13.18 in [REP5-014]. The Applicant and RHS provide responses in [REP5-014 and REP5-054] respectively. The ongoing dispute regarding this matter is recorded in the SoCG submitted by the RHS at Deadline 5 [REP5-010].
- 4.4.5 The RSPB provided comment in [REP1-045] and in [REP3-060] on the case presented for IROPI, to which the Applicant responded, presented in [REP2-14] and [REP4-007]. This matter was further explored by the ExA in FWQ 2.4.10, to which the Applicant has provided a response in [REP5-014].

4.5 Compensation measures

- 4.5.1 The Applicant presents a proposed suite of compensation and existing SPA enhancement measures in Section 5 of [APP-044].
- 4.5.2 During the examination, the ExA explored the existing management plans relevant to Thames Basin Heaths SPA and WQ 1.4.9 [PD-006] asked the Applicant, NE and SWT whether the compensation and enhancement measures proposed under the dDCO could be considered in addition to normal practice. The Applicant provided a response in [REP2-013] confirming it considers the works to be additional to normal practice and refer to meeting minutes from a meeting with NE, the RSPB, and SWT presented in [APP-041]. NE provided a response in [REP2-034] confirming that the proposed measures are outside of existing management plans and legal agreements and this position is reflected in the SoCG with NE submitted at Deadline 5 [REP5-003]. SWT did not provide a response to this question. SCC, who own the existing SPA land managed by SWT on its behalf responded in [REP2-045] stating that the compensation and enhancement measures proposed are at a larger scale and proposed over a shorter time period than normal planned management activities for the land.
- 4.5.3 The Applicant was asked to clarify its position upon the development of the detailed design of the proposals (WQ 1.4.14, [PD-006]) to which the Applicant responded in [REP2-013] that even if a reduced land-take from the SPA is possible at the detailed design stage, the suite of compensation and enhancement measures would remain as secured within Requirement 8 of the dDCO [REP5-002].
- 4.5.4 The ExA also questioned the Applicant and NE about the process under which the areas of SPA compensation land would become designated as part of the Thames Basin Heaths SPA (WQ 1.4.24 [PD-006]). Both parties provided a response on their expectations in this regard that the compensation land would be notified to the European Commission, with NE adding that the land would normally be automatically treated as a SPA, but concluding that ultimately the European Commission holds responsibility for this decision.
- 4.5.5 The ExA explored the immediate and long-term delivery of the measures described in the Applicant's HRA Report and the Applicant's SPA MMP [AS-015]. Matters explored were the nature, responsibilities, and mechanisms for monitoring (WQ 1.4.25 and 1.4.27 [PD-006]) and long-term funding (WQ 1.4.26 [PD-006]). The Applicant responded to these questions in [REP2-013]. The commitments made in the SPA MMP are secured by Requirement 8 in the dDCO [REP5-002].
- 4.5.6 In response to WQ 1.4.6 [PD-006] around the timing of the compensation and enhancement works the Applicant stated in [REP2-013] that under Requirement 8 of the dDCO [APP-018] now [REP5-002] the SPA compensation and enhancement works will have 'begun' prior to construction but will not be complete and so will continue throughout the construction period. The details of the phasing and monitoring of the compensation and enhancement works are to be secured in the SPA MMP

via Requirement 8. The ExA also asked parties about the definition of 'begun' as it relates to Requirement 8. The SoCG with NE at Deadline 3 [REP3-002] confirms that the meaning of 'begun' is agreed and requires that, as a minimum, preparatory work activities for the compensation and enhancement works have commenced prior to construction. The wording of Requirement 8 in the dDCO in this regard is deemed as being satisfactory to both parties. The position remains agreed at Deadline 5 between NE and the Applicant [REP-003].

- 4.5.7 In its representation at Deadline 1 [REP1-018] SCC raised some concerns around thinning of woodland (part of the proposed enhancement measures) leading to increased wind throw. Discussions between parties continued throughout the examination period and in the SoCG submitted at Deadline 5 [REP5-009] SCC and the Applicant are recorded as being in agreement that the SPA MMP is a suitable framework for future management and monitoring.
- 4.5.8 In response to the relevant representation made by NE [RR-020] the ExA asked the Applicant and NE (WQ 1.4.11, [PD-006]) to provide an update on the level of agreement reached regarding the details of monitoring and management of the SPA enhancement and reinstatement of temporary land-take, and an explanation of how the conclusions presented in the Applicant's HRA report may be affected by progress. In their responses at Deadline 2, the Applicant [REP2-013] and NE [REP2-034] highlight that discussions were ongoing but that resolution was likely and that the conclusions of the HRA report would not be affected.
- 4.5.9 The ExA asked the relevant local authorities, NE, the RSPB and SWT to comment on their satisfaction with the proposals (WQ 1.4.33 [PD-006]). Responses were provided at Deadline 2 with NE stating in [REP2-034] that it was were in agreement with the objectives and principles in the SPA MMP and was advising the Applicant regarding long-term work and funding. SCC [REP2-045] and EBC [REP2-028] confirmed satisfaction with the proposals and GBC did not comment [REP2-032]. The RSPB stated satisfaction with the nature and scale of the measures proposed in its response [REP2-050]. which was stated as a summary of the content of its Deadline 1 submission [REP1-045], but raised matters of concern [REP2-050] around the proposed duration of the long-term SPA bird monitoring proposals, which the Applicant addressed in [REP2-014] (see Paragraph 4.5.10 below). The SoCG between the Applicant and NE submitted at Deadline 5 [REP5-002] reflects agreement regarding the compensation and enhancement proposals.
- 4.5.10 In its FWQ 2.4.3 [PD-010] the ExA asked the local authorities, NE, and the RSPB if they were content with the Species Monitoring Programme within the SPA MMP [AS-015]. SCC, GBC, and EBC state in their responses [REP5-029, REP5-038, REP5-037, REP5-) their satisfaction but defer to NE and the RSPB. The RSPB responded that it was not [REP5-043], stating that the frequency of bird population monitoring is considered insufficient. NE respond stating its satisfaction [REP5-032]. The SoCG between the Applicant and NE submitted at Deadline 5 [REP5-002] reflects agreement regarding the monitoring of the SPA bird species during and post-construction.

Table 4.1: The Applicant’s Statement to Inform Appropriate Assessment (SIAA) and degree of agreement with Interested Parties

Features	Potential Adverse Effect on Integrity?*	Agreed with SCNB and other relevant parties?	Comments
<u>Thames Basin Heaths SPA</u>			
European nightjar	Cannot be excluded [APP-043]	Y [APP-138], [REP3-002] Revision 1, [REP5-003]	The Applicant’s conclusions in relation to the effects of air quality are disputed by the RHS [REP5-010]. See Matrix 1. The Applicant has put forward and assessment of alternatives, a case for IROPI, and a proposed compensatory package. Evidence was presented with the application of extensive discussion with NE on the compensation measures. NE state in the SoCG [REP5-003] agreement with these matters.
woodlark	Cannot be excluded [APP-043]	Y [APP-138], [REP3-002] Revision 1, [REP5-003]	
Dartford warbler	Cannot be excluded [APP-043]	Y [APP-138], [REP3-002] Revision 1, [REP5-003]	

*From Applicant’s HRA report and integrity matrices [APP-043].

ANNEX 1: STAGE 2 MATRICES: ADVERSE EFFECT ON INTEGRITY

Stage 2 Matrices: Adverse Effect on Integrity

This annex of the RIES identifies the European sites and features for which the Applicant's conclusions with regards to adverse effects on integrity were disputed by Interested Parties. Therefore, revised integrity matrices have been produced by the Planning Inspectorate.

The revised matrices have been revised to reflect the additional information gathered during examination with respect to the matter, and this has been added to the footnotes supporting the matrices.

In addition, a separate 'in-combination' matrix has been produced, based on information provided by the Applicant in [APP-043] and information gathered during the examination up to the date stated in Section 1 of this RIES.

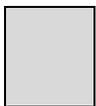
Key to Matrices:

- ✓ Adverse effect on integrity (AEoI) cannot be excluded
- × No AEoI
- ? Applicant and Interested Parties do not agree that an AEOI can be excluded
- C construction
- O operation

Decommissioning effects have not been assessed, as due to the nature of the M25 Junction 10 and the A3 as part of the strategic road network, it is not envisaged that the Proposed Development will be subject to decommissioning (Paragraph 3.4.5 [APP-043]).

Information supporting the conclusions is detailed in footnotes for each table with reference to relevant supporting documentation.

Where an impact is not considered relevant for a feature of a European Site the cell in the matrix is formatted as follows:



Stage 1 Matrix A: Thames Basin Heaths SPA

Site Code: UK9012141

Distance to project: 0 km, propels are within the European site boundary, Ockham and Wisley Commons SSSI component

European site feature(s)	Likely Effects of NSIP (alone)														
	Habitat loss		Degradation of habitats by changes in air quality		Degradation of habitats by changes in water quality		Disturbance by changes in noise		Disturbance by changes in recreational use		Disturbance by changes in lighting		Spread of non-native invasive plants		
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	
Feature 1 A224 Caprimulgus europaeus; European nightjar (breeding)	✓a	b	xc	xd	xe	xe	xf	xg	xh	xj	xj	xj	xj	xk	l
Feature 2 A246 Lullula arborea; woodlark (breeding)	✓a	b	xc	xd	xe	xe	xf	xg	xh	xj	xj	xj	xj	xk	l
Feature 3 A302 Sylvia undata; Dartford warbler (breeding)	✓a	b	xc	xd	xe	xe	xf	xg	xh	xj	xj	xj	xj	xk	l

Footnotes taken from Applicant's information in [APP-043] unless where indicated.

- a.** The permanent loss of mixed woodland habitat from the SPA could have an adverse effect on the conservation objectives to 'maintain the extent and distribution of the habitats of the qualifying species' and 'maintain or restore the distribution, abundance and availability of key prey items'. This represents an adverse effect on the integrity of the

Thames Basin Heaths SPA as it cannot be ruled out without any reasonable scientific doubt that this would have an indirect negative impact on the SPA qualifying species (Paragraphs 7.2.7 to 7.2.24 the SIAA, [APP-043])(Paragraphs 4.2.1 to 4.2.3 of this RIES).

- b.** The habitat loss will take place during the construction stage (see a.).
- c.** Qualifying species will not be subject to significant effects from air pollution during construction. Changes in air quality as a result of the Proposed Development (changes in vehicle movements and increased construction traffic) will lead to increases in nitrogen deposition of less than 1% and will be below existing baseline levels. Therefore, emissions during construction will not have a negative impact on the condition of the habitats within the SPA, nor an adverse effect on the integrity of the Thames Basin Heaths SPA (Paragraphs 7.2.35 to 7.2.40 of the SIAA [APP-043]).
- d.** Predicted increases in nitrogen deposition of greater than 1% of the critical load are restricted to within the first 12 m of the operational road boundary. All other estimated increases in nitrogen deposition within the SPA can be considered not to be significant, and in many locations, nitrogen deposition will be reduced. Any increases predicted as a result of the operation of the Proposed Development in 2022 are below the current baseline nitrogen deposition levels. Therefore, it can be concluded with confidence that changes to air quality as a result of the operation of the Proposed Development will have no adverse effects on the integrity of the SPA, in respect of the SPA qualifying species (Paragraphs 7.2.41 to 7.2.54 of the SIAA [APP-043]).

During the examination, the conclusions of the assessment of effects of operational air quality changes to the SPA were disputed on several points by the RHS. The ExA sought evidence through WQ and ISH2 and representations were made by the Applicant, the RHS, and other interested parties including NE. An account of the evidence and the relevant documents is set out in Paragraphs 4.2.11–4.2.22 of this RIES.

- e.** The SPA habitat will not be subject to significant effects of degradation from changes in water quality during construction or operation. Standard and appropriate design and mitigation measures will be put in place to minimise the risk of sediment and/or other contaminants entering watercourses or groundwater and affecting the quality of water and the surrounding heathland upon which the qualifying species rely. Therefore, it can be concluded with confidence that changes to water quality as a result of the construction and/or operation of the Proposed Development

will have no adverse effects on the integrity of the SPA, in respect of the SPA qualifying species (Paragraphs 7.2.56 to 7.2.66 of the SIAA [APP-043]) (Paragraphs 4.2.8 to 4.2.10 of this RIES)

- f.** The construction activities will generally be at lower noise levels than the existing background noise levels within the heathland areas where the qualifying species occur. Although these construction activities will still be audible against the existing ambient sound levels at the location of the qualifying species territories, they will be more easily masked by other closer noise sources. Although there will be minor increases (up to 3 dB) as a result of continuous construction noises, the qualifying species are less likely to be startled by loud irregular noises (such as dropping objects at heights) because of their distance from the DCO boundary. Louder activities, such as bridge demolition, will be extremely short-term and localised. Therefore, there will be no adverse effects on the integrity of the SPA, in respect of the SPA qualifying species, as a result of construction noise (Paragraphs 7.2.72 to 7.2.81 of the SIAA [APP-043]) (Paragraphs 4.2.4 to 4.2.7 of this RIES).
- g.** The operational road traffic noise levels within the heathland areas where the qualifying species occur are subject to changes in background noise levels of less than 3 dB. This is considered a negligible long-term change (refer to DMRB 11:3:7) and will not have an impact on the density of qualifying species within the SPA. Therefore, there will be no adverse effects on the integrity of the SPA, in respect of the SPA qualifying species, as a result of operational noise (Paragraphs 7.2.82 to 7.2.89 of the SIAA [APP-043]) (Paragraphs 4.2.4 to 4.2.7 of this RIES).
- h.** Due to the works taking place within the SPA, and no enhanced access to the SPA during construction, it is possible to state with confidence that recreational usage of the SPA will not increase during the construction works. Due to there being no increase in recreational disturbance as a result of the construction of the Proposed Development, there will be no adverse effects on the integrity of the SPA, in respect of the SPA qualifying species, as a result of increased recreational disturbance during construction (Paragraphs 7.2.100 to 7.2.104 of the SIAA [APP-043]) (Paragraphs 4.2.4 to 4.2.7 of this RIES).
- i.** The operational Proposed Development will not improve direct access to Wisley or Ockham Common, nor will it change the existing car parking options for recreational visitors to either of these Commons. Therefore, the operation of the Proposed Development is not expected to result in changes to the numbers of visitors to the Thames Basin Heaths SPA, or the way in which visitors gain access to the SPA. In addition, new routes within the SPA that avoid the

sensitive heathland areas will allow visitors to increase their current walking route options and are therefore likely to lead to some visitors being drawn away from the sensitive heathland areas. Due to there being no increase in recreational disturbance as a result of the operational Proposed Development, there will be no adverse effects on the integrity of the SPA, in respect of the SPA qualifying species, as a result of increased recreational disturbance once operational (Paragraphs 7.2.105 to 7.2.116 of the SIAA [APP-043]) (Paragraphs 4.2.4 to 4.2.7 of this RIES).

- j.** Light spill will be minimised by embedded design measures, with the provision of directional lighting to avoid light spill outside the DCO boundary both during construction and operation. The absence of changes in lighting, either during construction or operation, will ensure that there is no adverse effect on the integrity of the SPA, in respect of the SPA qualifying species, as a result of lighting changes (Paragraphs 7.2.117 and 7.2.118 of the SIAA [APP-043]) (Paragraphs 4.2.4 to 4.2.7 of this RIES).
- k.** The embedded measures will ensure that the construction activities do not cause the spread of non-native invasive plant species. Therefore, it can be concluded with confidence that there will not be any spread of non-native invasive plant species within the SPA (and therefore no associated adverse effects on the integrity of the SPA) as a result of the construction of the Proposed Development (Paragraphs 7.2.119 and 7.2.120 of the SIAA [APP-043]) (Paragraphs 4.2.23 to 4.2.24 of this RIES).
- l.** The potential to spread non-native invasive plants will only take place during the construction stage (see k.).

European site feature(s)	Likely Effects of NSIP (in-combination)													
	Habitat loss		Degradation of habitats by changes in air quality		Degradation of habitats by changes in water quality		Disturbance by changes in noise		Disturbance by changes in recreational use		Disturbance by changes in lighting		Spread of non-native invasive plants	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O
Feature 1 A224 Caprimulgus europaeus; European nightjar (breeding)	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm
Feature 2 A246 Lullula arborea; woodlark (breeding)	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm
Feature 3 A302 Sylvia undata; Dartford warbler (breeding)	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm

m. Qualifying species will not be subject to in combination effects from other plans and projects during construction or operation, as all local authorities have a Local Plan HRA to ensure their plans and projects avoid adverse effects on the SPA. Therefore, there will be no adverse effect on the integrity of the SPA, in respect of the SPA qualifying species, as a result of in combination effects (refer to Tables 10 and 11 of the SIAA [APP-043]).

The scope and validity of the in-combination assessment was disputed by the RHS during the examination, however the approach and conclusions of the assessment were agreed with NE. See Paragraphs 4.1.3 to 4.1.5 of this RIES.