



The Planning Inspectorate
Yr Arolygiaeth Gynllunio

REPORT on the IMPLICATIONS for EUROPEAN SITES

Proposed Lower Thames Crossing Project

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

Planning Inspectorate Reference: TR010032

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1 INTRODUCTION

1.1 Background

- 1.1.1 National Highways (the Applicant) has applied to the Secretary of State (SoS) for a Development Consent Order (DCO) under section 37 of the Planning Act 2008 (PA2008) for the proposed Lower Thames Crossing (the Proposed Development). The Secretary of State has appointed an Examining Authority (ExA) to conduct an examination of the Proposed Development, 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 Proposed Development.
- 1.1.2 The relevant SoS is the competent authority for the purposes of the Habitats Regulations¹ 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 on the Implications for European Sites (RIES) documents and signposts the information in relation to potential effects on European Sites² that was provided within the DCO application and submitted throughout the Examination by the Applicant and Interested Parties (IPs) up to Deadline (DL) 6 of the Examination (31 October 2023). 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:
[Examination Library](#)
- 1.1.4 This RIES is issued to ensure that IPs including the Appropriate Nature Conservation Body (ANCB), Natural England (NE), is 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.
- 1.1.5 It also aims to identify and close any gaps in the ExA's understanding of IP's positions on Habitats Regulations matters, in relation to all European sites and qualifying features as far as possible, in order to support a robust and thorough recommendation to the Secretary of State (SoS).
- 1.1.6 Following consultation, the responses will be considered by the ExA in making its recommendation to the SoS and made available to the SoS along with this report. The RIES will not be revised following consultation.

¹ The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations).

² 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.

1.2 Documents used to inform this RIES

1.2.1 The Applicant provided a Habitats Regulations Assessment Screening Report and Statement to inform an Appropriate Assessment [APP-487] with screening and integrity matrices supplied in an appendix [APP-488]. The Applicant also supplied the following updates to its HRA Report in the course of the Examination to address comments raised by IPs:

- **[REP2-008]** - Statement of Common Ground between National Highways and Natural England: Annex C.7 Without prejudice consideration of mitigation for air quality effects on Epping Forest SAC.
- **[REP2-008]** - Statement of Common Ground between National Highways and Natural England: Annex C.8 Underwater noise and the effect on bird features of the Thames Estuary and Marshes SPA/Ramsar.
- **[REP2-008]** - Statement of Common Ground between National Highways and Natural England Annex C.12 Response to Natural England advice on air quality impacts on European Sites.
- **[REP2-008]** - Statement of Common Ground between National Highways and Natural England Annex C.13 Coalhouse Point Mitigation Progress Update.
- **[REP2-068]** - Without prejudice assessment of the air quality effects on European sites.

1.2.2 The HRA Report concluded that adverse effects on the integrity of all European sites could be excluded. However, to give due regard to NE's representations made during the pre-application Evidence Plan process and presented in Section 1.5 of the Applicant's HRA Report [APP-487], the Applicant also provided a 'without prejudice' case for mitigation measures for Epping Forest Special Area of Conservation (SAC). An overview of these matters is provided in Section 3 of this RIES.

1.2.3 In addition to the HRA Report, the RIES refers to representations submitted to the Examination by IPs, Issue Specific Hearing (ISH) documents, Statements of Common Ground (SoCG) and other Examination documents as relevant. All documents can be found in the [Examination Library](#).

1.3 Change Requests

1.3.1 The Applicant has made several change requests during the course of the Examination. The first formal Change Request was submitted on 2 August 2023 [CR1-003] and comprised the following changes:

- Change reference MRC01 – reduction in the Order Limits through the removal of two parcels of farmland required for nitrogen deposition compensation (Bluebell Hill and land at Burham);
- Change reference MCR02 - Increase in the North Portal headwall Limits of Deviation from 125m to 275m; and

- Change reference MCR03 - Reduction of the Order Limits, relocation of utilities and Utility Logistics Hubs in East Tilbury, requiring acquisition of permanent rights over land.
- 1.3.2 The Applicant concluded [CR1-002, Section 7.1] that the changes would not result in any new or different environmental effects. An amended Environmental Statement (ES) Project Description [CR1-003] and associated updated Figure 2.1 (Route alignment and Order Limits CR1-004) were submitted with the changes.
- 1.3.3 The ExA responded on 29 August 2023 [PD-031] accepting all three changes into the Examination. MRC02 was also not considered by the ExA in its response to be a material change to the Proposed Development. The three changes were accepted into the examination.
- 1.3.4 Change Request 2 was submitted into the Examination on 8 September 2023 [CR2-003 to CR2-021]. This comprised the following changes:
- Change reference EC01 - Brentwood Road utilities change – land use change and gas pipeline realignment; and
 - Change reference EC02 – Fen Lane land use change to allow future access to utilities.
- 1.3.5 The Applicant considered [CR2-003, Section 2.4] that there were no new or materially different environmental effects associated with the proposed change request. This change request was accepted into the Examination by the ExA on 25 September 2023 [PD-039].
- 1.3.6 The ExA was notified of a further two changes on 1 August 2023 and a formal request was submitted on 8 September 2023 [CR3-001] as two separate change requests. These changes comprised the following:
- Change reference EC03 – Amendments to an existing bridge over the A127 for walkers, horse riders and cyclists; and
 - Change reference EC04 – Acquisition of access rights to construct a new public right of way along Footpath 146 and rights for the establishment of a temporary construction compound for the north portal and tunnel.
- 1.3.7 The ExA accepted these changes on 2 November 2023 [PD-045].
- 1.3.8 No relevant HRA matters arose from any of these change requests.

1.4 RIES Questions

- 1.4.1 This RIES contains questions predominantly targeted at the Applicant and NE, but also for the attention of host and neighbouring local authorities, the Environment Agency (EA), the Marine Management Organisation (MMO) and the Port of London Authority (PLA), which are drafted in blue, underlined italic text. Each question has an ID number containing the reference 'R' indicating that it arises from this RIES and a number. The ExA would be grateful for responses from parties on these questions. It is

stressed that responses to other matters discussed in the RIES are equally welcomed. In responding to the questions, please refer to the ID number.

1.4.2 Comments on the RIES are timetabled for Deadline 8 (5 December 2023).

1.5 HRA Matters Considered During the Examination

1.5.1 The Examination to date has focussed on the following matters:

- The Applicant's conclusions of no likely significant effects (LSE) from air quality on North Downs Woodlands SAC and Thames Estuary and Marshes Special Protection Area (SPA) and Ramsar site.
- The Applicant's overall assessment methodology, including plans and projects considered, for air quality in-combination effects on North Downs Woodlands SAC.
- The design and implementation of the Applicant's mitigation for effects on functionally linked land (FLL) to Thames Estuary and Marshes SPA and Ramsar site.
- The Applicant's conclusions of no Adverse Effects on Integrity (AEoI) to Epping Forest SAC and 'without prejudice' mitigation measures.
- The age and appropriateness of baseline ecological data used to support the Applicant's HRA Report.

2 LIKELY SIGNIFICANT EFFECTS

2.1 European sites considered

Introduction

2.1.1 The Proposed Development is not connected with or necessary to the management for nature conservation of any European sites. It is therefore necessary to consider if any European sites would be subject to LSE as a result of the Proposed Development.

2.1.2 Section 3 of the HRA Report [APP-487] describes the process undertaken by the Applicant to identify sites and features for consideration in the HRA Report. The key criteria used were taken from the Design Manual for Roads and Bridges (DMRB) LA115 and are as follows:

- *Is the Proposed Development ≤2km of any Special Area of Conservation (SAC), candidate SAC (cSAC), possible SAC (pSAC), SPA, potential SPA (pSPA), or Ramsar site?*
- *Is the Proposed Development ≤ 30km of any SAC, cSAC, or pSAC, where bats are one of the qualifying interests?*
- *Does the Proposed Development cross or lie adjacent to, upstream of, or downstream of, a watercourse which is designated in part or wholly as a European site?*
- *Does the Proposed Development have potential hydrological or hydrogeological linkage(s) to a European site containing a groundwater dependent terrestrial ecosystem (GWDTE) which triggers assessment in accordance with DMRB LA113?*
- *Is there ecological connectivity between the Project and other European sites?*
- *Would additional European sites be subject to screening where the existence of ecological connectivity between projects and European sites is identified beyond the screening criteria³.*

2.1.3 In addition, the Applicant also set out the zone of influence over which impacts could occur in Table 2.1 of the HRA Report and described how the extent of FLL was also taken into consideration. Agreement on what should constitute FLL was reached through the Applicant's Evidence Plan process with NE, details of which were provided in Appendix C to the HRA Report [APP-487, Appendix C, Paragraph C3.9].

2.1.4 Using these selection criteria, and with reference to the zones of influence identified in Table 2.1, the Applicant identified seven European sites:

³ Criteria taken from Paragraph 2.5.4, [APP-487]

Table 2.1: Sites captured by the Applicant's screening criteria

Applicant's criterion	European sites captured
≤2km of any SAC, cSAC, pSAC, SPA, pSPA, or Ramsar site	<ul style="list-style-type: none"> • Thames Estuary and Marshes Ramsar site • Thames Estuary and Marshes SPA • North Downs Woodland SAC • Peter's Pit SAC
≤ 30km of any SAC, cSAC, or pSAC, where bats are one of the qualifying interests	No additional sites identified
Crosses or lies adjacent to, upstream of, or downstream of, a watercourse which is designated in part or wholly as a European site	<p><u>Upstream</u>: no sites identified</p> <p><u>Downstream</u>:</p> <ul style="list-style-type: none"> • Benfleet and Southend Marshes SPA • Benfleet and Southend Marshes Ramsar site • Outer Thames Estuary SPA • Thames Estuary and Marshes SPA • Thames Estuary and Marshes Ramsar site
Has potential hydrological or hydrogeological linkage to a European site containing a GWDTE	<ul style="list-style-type: none"> • Thames Estuary and Marshes SPA • Thames Estuary and Marshes Ramsar site
Ecological connectivity between the Project and other European sites	No additional sites identified

2.1.5 The Applicant concluded that Peter's Pit SAC could be ruled out prior to screening due to the site being located 2km from land within the Order Limits required for ecological habitat creation only. The Applicant therefore considered that the types of activities that would occur within Order Limits closest to their location would not result in any risk on any sites outside the Order Limit boundary.

2.1.6 Benfleet and Southend Marshes SPA, Benfleet and Southend Marshes Ramsar site and Outer Thames Estuary SPA were also ruled out from further consideration due to being outside the zone of influence for hydrological impacts identified in HRA Report Table 2.1.

European Sites identified

- 2.1.7 The Applicant's HRA Report [APP-487] therefore identified four European sites for inclusion within the assessment. Their location in relation to the Proposed Development is described in Table 2.2 below:

Table 2.2: European sites identified in the Applicant's HRA Report

Name of European site	Distance from Proposed Development (km)
Thames Estuary and Marshes SPA	0.1km east
Thames Estuary and Marshes Ramsar site	Adjacent to the Order Limits to the east
North Downs Woodlands SAC	Adjacent to the Order Limits to the south
Epping Forest SAC	19km west

- 2.1.8 The location of these sites relative to the Proposed Development, and the 2km buffer, are depicted in [APP-487], Appendix A, Figure 1.
- 2.1.9 The Applicant has not identified any potential impacts on Natura 2000 sites in other EEA States [APP-487].
- 2.1.10 The ExA has also requested clarification from the Applicant on the inclusion of other European sites during the course of the Examination. In ExQ1 [PD-029], the ExA queried the reference to the Southern North Sea SAC in the Environmental Statement [APP-147] but not in the HRA Report. In response, the Applicant [REP4-194] noted that this site had been discounted early in discussions on scoping for the HRA process with the agreement of Natural England.
- 2.1.11 At DL4 [REP4-195], the Applicant provided a report on the possible drawdown effects on groundwater from tunnelling activities. This report identifies that the disposal of water drawn into the tunnel during construction would be into ditches which are linked to the Medway Estuary and Marshes SPA and Ramsar site. The Applicant was asked to provide further clarification on this possible pathway and potential for effects on these sites in ExQ2 [PD-040]. This is discussed further in RIES Table 2.3 below.
- 2.1.12 The list of sites considered by the Applicant was discussed with NE through the Evidence Plan process [APP-487, Appendix C, Paragraph C3.4]. In response to the ExA's First Written Questions [PD-029], NE also confirmed [REP4-338] it was satisfied that the Applicant had correctly identified the European sites and qualifying features that could be affected by the Proposed Development.

2.2 Potential impact pathways

- 2.2.1 HRA Report, Section 4.1 [APP-487] details the approach taken to identifying potential LSE from the Proposed Development, along with details of the thresholds and temporal scope used to define the potential for impacts to arise. HRA Report Tables 6.1 to 6.4 list the potential impact pathways for each of the four identified sites and their qualifying features. In considering potential impact pathways, the Applicant's HRA Report [APP-487] assesses the potential for LSE during construction, operation and maintenance. ES Chapter 2, paragraph 2.8.36 [APP-140], notes that there are no plans to decommission the Proposed Development. On completion it would become a permanent part of the Strategic Road Network (SRN). Decommissioning was however considered in the HRA Report, in relation to the removal or demolition of buildings and structures associated with the Proposed Development, or the closure of temporary construction facilities such as construction compounds.
- 2.2.2 At DL1 [REP1-269], The Port of London Authority (PLA) noted that the Applicant's HRA should assess the following additional pathways:
- effects of nitrogen emissions on intertidal habitats; and
 - visual disturbance from working on the foreshore in winter.
- 2.2.3 At DL3 [REP3-217], the PLA clarified that its concerns in relation to intertidal habitats and the nitrogen deposition pathway were specific to saltmarsh habitats. This is discussed further in RIES Section 2.5.
- 2.2.4 No further additional impact pathways have been identified by IPs for inclusion within the Examination to date.

2.3 In-combination effects

- 2.3.1 The Applicant describes in the HRA Report, Section 4.3 [APP-487] that any project alone LSE identified as part of HRA screening would also therefore be considered to have a potential for in-combination LSE. Therefore, such sites and features were taken forward to assess the potential for effects on integrity of the site.
- 2.3.2 As such, no specific in-combination methodology is presented in the HRA Report [APP-487] for the screening stage.
- 2.3.3 Several comments were received from IPs on the approach to the methodology for the in-combination assessment and the approach to identifying plans and projects specifically in relation to the air quality assessments. These are relevant to the in-combination assessment of effects on integrity. Further detail and discussion are provided in Section 3 of this RIES.

2.4 The Applicant's assessment

- 2.4.1 The Applicant's conclusions in relation to screening and effects on integrity are presented in HRA Report, Sections 6.4 and 7.5 of the HRA Report [APP-487] respectively. They are also summarised in the Applicant's screening and integrity matrices [APP-488].

Sites for which the Applicant concluded no LSE on all qualifying features

- 2.4.2 In its HRA Report [APP-487], the Applicant concludes that the Proposed Development would not be likely to give rise to significant effects either alone or in-combination with other plans and projects on all qualifying features of North Downs Woodlands SAC from air quality impacts. This was the only identified impact pathway for the site.
- 2.4.3 The Applicant's conclusions in respect of North Downs Woodlands SAC were disputed by IPs and questioned by the ExA during Examination. See Section 2.5 of this RIES for further details.

Sites for which the Applicant concluded LSE on some or all qualifying features

- 2.4.4 The Applicant concluded that the Proposed Development would be likely to give rise to significant effects, both alone and in-combination with other projects or plans, on the following sites:
- Thames Estuary and Marshes SPA
 - land take from FLL - terrestrial and aquatic environment;
 - noise and vibration - construction / operation on FLL;
 - visual disturbance - construction on FLL; and
 - recreational disturbance - operation.
 - Thames Estuary and Marshes Ramsar site
 - Land take of FLL and from the site itself (terrestrial and aquatic environment);
 - change in surface water quality / quantity – construction;
 - noise and vibration - construction / operation on FLL;
 - visual disturbance - construction on FLL; and
 - recreational disturbance - operation.
 - Epping Forest SAC
 - air quality – vehicle emissions - operation.
- 2.4.5 The qualifying features and LSE pathways screened in by the Applicant are detailed in HRA Report Tables 6.17 to 6.20 [APP-487]. The Applicant's

conclusions on LSE were disputed by the IPs. See Section 2.5 of this RIES for further details.

2.5 Examination matters

- 2.5.1 In its Relevant Representation [RR-0784], NE noted its agreement with the conclusions of the Applicant's screening stage with the exception of:
- conclusions of no LSE from underwater noise on Thames Estuary and Marshes SPA birds;
 - concerns with the approach to assessing air quality effects – whether the Lower Thames Crossing traffic model builds in the same data for in-combination development as that used for Local Plans; and
 - conclusions of no LSE on North Downs Woodlands SAC.
- 2.5.2 The Applicant's conclusions in relation to underwater noise on Thames Estuary and Marshes SPA were also disputed by the PLA [REP1-269].
- 2.5.3 The PLA raised general points [REP1-271] in relation to the age of the Applicant's baseline terrestrial and marine surveys used for the HRA. It considered that these could be out of date and that it expected an updated baseline to be provided. The Applicant responded [REP2-046] noting that pre-construction surveys would be used to update survey information and inform the detailed design. The PLA considered at DL5 [REP5-111] that it remained concerned that survey limitations were acceptable, particularly in light of the dynamic nature of river habitats.

QR1: Can the PLA comment on the Applicant's updated response on survey data provided at Deadline 5 and confirm what specific limitations (if any) it considers this imposes on the conclusions of its HRA Report?

QR2: With regard to the matter raised by the PLA and addressed in QR1, can NE please identify whether it has any concern in respect of survey data and updating results at detailed design stage. What limitations could arise from that data? If it does have a concern on this point, NE is requested to confirm what specific limitations it considers this imposes on the conclusions of its HRA Report?

- 2.5.4 The PLA [REP1-269] also queried the impact pathways to Thames Estuary and Marshes Ramsar site.
- 2.5.5 Gravesham Borough Council [REP6-024] noted the need for monitoring of dust, air quality, noise and vibration and lighting during construction on Thames Estuary and Marshes SPA and Thames Estuary and Marshes Ramsar site: the Applicant considers that this is addressed through the Code of Construction Practice [REP5-048].
- 2.5.6 The general approach to the air quality assessment was subject to pre-application discussion between the Applicant and NE. NE provided further details of the advice given to the Applicant on its air quality assessment in [REP1-262, Annex G].

- 2.5.7 Concerns were equally raised about the overall approach to the air quality assessment for this site by Tonbridge and Malling Borough Council [REP1-299].
- 2.5.8 The conclusions of no LSE on North Downs Woodlands SAC were also disputed by CPRE Kent [REP1-222].
- 2.5.9 These matters raised in the Examination to date for specific sites, or for which the ExA seeks clarity in relation to LSEs screened out by the Applicant, are therefore summarised in Table 2.3 below.

Table 2.3: Issues raised in the Examination to date by the ExA and IPs in relation to the Applicant's screening of LSEs (alone and in-combination)

ID	Potential impact pathway	Details of issue	ExA observation/ question
Thames Estuary and Marshes SPA/Thames Estuary and Marshes Ramsar site			
1	Underwater noise and vibration - construction	<p>The Applicant's assessment [APP-487] identified potential disturbance effects from tunnel construction beneath the River Thames to the majority of qualifying features of the SPA and Ramsar site and FLL (Tables 6.1 and 6.2 of the HRA Report). However, the Applicant's modelling, described in paragraphs 6.2.89 to 6.2.91 of [APP-487] concluded that both noise on underwater feeding birds and particle velocity (affecting invertebrate prey distribution) would not be affected by tunnel construction. The Applicant concluded that noise and vibration would not be perceptible in the water column above the tunnel during construction when considered against background noise and therefore that there would be no potential project alone or in-combination effects with other plans or projects.</p> <p>NE [RR-0784 and APP-099] and the PLA [REP1-269] disputed the Applicant's conclusions of no LSE from this impact pathway both alone and in-combination. NE noted [RR-0784] that the Applicant's submission did not fully consider how noise can affect birds' hearing underwater before concluding no LSE.</p> <p>In [REP1-269 and REP3-217], the PLA also noted that the assessment on waterfowl feeding behaviour from underwater noise had not been adequately explored. It also</p>	<p><u>QR3: To the Applicant: In relation to LSE from tunnel construction, please provide evidence of where you have addressed the concerns of the PLA in relation to effects on bird feeding behaviour.</u></p> <p><u>QR4: To NE and PLA: In relation to the potential for LSE on bird feeding behaviour, to which qualifying features do you consider this relates, and is this addressed in the Applicant's assessment?</u></p> <p><u>QR5: To the Applicant: Please provide clarification on your position in relation to the underwater noise and vibration impact pathway for each of the qualifying features of Thames Estuary and Marshes SPA and Ramsar site in your updated HRA Report.</u></p>

ID	Potential impact pathway	Details of issue	ExA observation/ question
		<p>noted that different birds would exhibit different feeding behaviour.</p> <p>The Applicant provided a technical note [REP2-008] further explaining that, as tunnel noise would not be heard above background levels, there was no possibility of an effect. In response, NE [REP4-324] contested that if noise could breach background levels, a pathway would exist and should be explored through the Appropriate Assessment process.</p> <p>NE considered [REP4-324] nevertheless that there was no risk of AEoI, and that the matter was a procedural point rather than an ecological risk. This matter was noted as still under discussion in its SoCG with the Applicant at DL5 [REP5-038].</p> <p>The PLA's position at DL6 [REP6-159 paragraph 5.2] remained that it considers the Applicant had responded in relation to effects on invertebrate prey, but not bird feeding behaviour.</p>	
2	Visual disturbance from working on the foreshore in winter	<p>This potential impact pathway was raised by the PLA [REP1-269] as requiring assessment for LSE. The Applicant's response [REP2-046] notes that this impact pathway is considered within its HRA Report [APP-487] at paragraphs 6.2.29 to 6.2.33 and 6.2.94 to 6.2.106. No further representations were received from the PLA or other IPs on this matter.</p>	<p>See Table 3.1 of this RIES for further information on this matter in relation to FLL.</p> <p><i><u>QR6: The PLA is invited to comment on the Applicant's response on this matter [REP2-046]. PLA is requested to confirm whether concerns remain that a LSE from visual</u></i></p>

ID	Potential impact pathway	Details of issue	ExA observation/ question
			<i><u>disturbance requires assessment. If so, what additional information is required?</u></i>
Thames Estuary and Marshes Ramsar site			
3	Effects on inter-tidal habitats from nitrogen deposition	This potential impact pathway was raised by the PLA [REP1-269] as requiring assessment for LSE. The Applicant's response [REP2-046] noted that there were no intertidal habitats within the area affected by nitrogen deposition (within 200m of the Affected Road Network (ARN)) due to the road being in tunnel at this point. No further representations were received from the PLA or other IPs on this matter.	<p><i><u>QR7: The PLA is requested to comment on the Applicant's response in relation to whether an impact pathway to intertidal habitats associated with the Thames Estuary and Marshes Ramsar site exists and, if concern remains, what information would be required to satisfy the concern.</u></i></p> <p><i><u>QR8: To NE. Are you satisfied with the explanation provided by the Applicant and its conclusion of no LSE on Thames Estuary and Marshes Ramsar site from nitrogen deposition? If not satisfied, what information would be required?</u></i></p>

ID	Potential impact pathway	Details of issue	ExA observation/ question
4	Air Quality - construction	<p>The Applicant's initial assessment [APP-487] concluded that there would be no LSE on the Ramsar site qualifying features from changes in air quality during construction.</p> <p>In response to matters raised by NE ([APP-099] and [REP1-262], Annex G) on the method used for its air quality assessment, the Applicant provided a 'without prejudice' update on air quality at DL2 [REP2-068]. This presented the results of a further air quality assessment using NE's methodological approach as a sensitivity test to establish if this would change the conclusions of the HRA Report. Section 5 of the Applicant's 'without prejudice' assessment [REP2-068] demonstrated a potential LSE from construction vehicle nitrogen dioxide emissions (NO_x) on Thames Estuary and Marshes Ramsar site. No LSE were identified for either NH₃ (ammonia) or nitrogen deposition at this site.</p> <p>At DL4, NE [REP4-324] confirmed agreement with the conclusions of no LSE from NO_x, but it did not agree with the conclusions of no LSE from nitrogen deposition or NH₃. At DL5 [REP5-109], NE explained that it did not agree with the conclusions of this 'without prejudice' assessment [REP2-068] as it ruled out potential LSE from ammonia despite the Proposed Development contributing 7% of the critical level during construction. NE considers all three pollutants have potential to have an AEOI.</p> <p>The Applicant's DL6 response [REP6-118] concluded that the sensitivity test demonstrated no material difference with its original HRA conclusions. It proposes to prepare a HRA</p>	See Table 3.1 of this RIES for further discussion on this matter

ID	Potential impact pathway	Details of issue	ExA observation/ question
		Addendum for DL8 (following the production of the RIES) which will update the assessment of air quality effects from vehicle emissions in light of NE's DL5 submissions. The Applicant confirms that this updated HRA Report will not be provided on a 'without prejudice' basis.	
North Downs Woodlands SAC			
5	Air quality - operation	<p>Several IPs (NE [REP1-262], CPRE Kent [REP1-222] and Tonbridge and Malling Borough Council [REP1-299]) raised concerns in relation to the Applicant's methodology for determining air quality effects on North Downs Woodlands SAC. NE [REP1-262] disputed the Applicant's conclusions of no LSE for project alone effects and thus also the conclusions of no in-combination LSE during operation.</p> <p>NE [REP1-262] queried whether the Applicant accounted for all allocated developments (including both consented and unconsented developments) from Local Plans in its traffic modelling, and the use of inconsequential NO_x in the air quality modelling as both affect the conclusions of no LSE on North Downs Woodlands SAC.</p> <p>NE also noted that although this would mean some projects could be included within the assessment that do not end up being developed, this represented a more precautionary approach to the assessment. It requested revisions to the methodology and that further modelling be completed [REP1-262].</p> <p>CPRE Kent [REP1-222] disputed the Applicant's methodology for the air quality assessment and the Applicant's</p>	See Section 3 of the RIES for further discussion on this matter

ID	Potential impact pathway	Details of issue	ExA observation/ question
		<p>conclusions. It similarly queried the developments included in the traffic modelling and the use of national growth factors instead of local plans and projects.</p> <p>The Applicant responded at DL2 [REP2-008] with a technical note appended to its SoCG with NE and a 'without prejudice' sensitivity test technical note on air quality and European sites [REP2-068] to address NE's position on the methodology and modelling. The results of the 'without prejudice' assessment indicated an LSE on this site from this impact pathway.</p> <p>At DL6, the Applicant [REP6-118] concluded that the 'without prejudice' sensitivity test technical note [REP2-068], whilst concluding an LSE, demonstrated no material difference with its original HRA conclusions. It proposed to prepare a HRA Addendum for DL8 which it stated will update the assessment of air quality effects from vehicle emissions in light of NE's DL5 submissions. The Applicant confirmed this updated HRA Report will not be provided on a 'without prejudice' basis.</p>	
Medway Estuary and Marshes SPA			
6	Discharge of tunnel water - construction	<p>In response to ExQ2 [PD-040] at DL6 [REP6-106] the Applicant explained that the tunnelling report supplied [REP4-193] was a historic report that is superseded by ES Appendix 14.5 [APP-458]. It noted therefore that there was now no requirement for dewatering at the south tunnel portal and that any water arising from construction of the tunnel would be collected and disposed of offsite at a</p>	N/A

ID	Potential impact pathway	Details of issue	ExA observation/ question
		licenced facility. It concluded that there would be no discharge of water into ditches to the south of the River Thames.	

2.6 Summary of Examination outcomes in relation to screening

- 2.6.1 [APP-487] concluded that LSE cannot be excluded for the impact pathways listed in paragraph 2.4.4 of this report and provided an assessment of effects on integrity for these pathways. Further description of the ongoing discussions in relation to these sites and impact pathways is provided in Section 3 of this RIES.
- 2.6.2 As described in Table 2.3 above, matters relating to effects on air quality and the effects of underwater noise remain unresolved. The ExA seeks responses from the Applicant and IPs, where indicated in Table 2.3 of this RIES, to provide clarity on the outstanding matters.

3 ADVERSE EFFECTS ON INTEGRITY (AEOI)

3.1 Conservation Objectives

- 3.1.1 The conservation objectives for the three European sites for which an LSE was initially identified by the Applicant at the point of the DCO application are included within Section 5.2 of the HRA Report [APP-487] and within the relevant sections of the screening matrices [APP-488].
- 3.1.2 As noted in RIES, Section 2, at DL2 the Applicant agreed to screen in North Downs Woodlands SAC into its assessment of effects on integrity. The conservation objectives for this European site were provided by the Applicant at DL2 [REP2-068] in Table 4.1.
- 3.1.3 The Applicant also makes reference in its assessment [APP-487 and REP2-068] to the NE supplementary advice supporting the relevant conservation objectives.
- 3.1.4 The Applicant noted in its screening matrices [APP-488] that no conservation objectives were available for Thames Estuary and Marshes Ramsar Site. Given the site largely overlaps with the Thames Estuary and Marshes SPA, the Applicant considered (Table E.3, [APP-488]) that the SPA conservation objectives were sufficient to support the assessment for both sites.

QR9: Can NE confirm it is satisfied with the Applicant's approach of using the conservation objectives for Thames Estuary and Marshes SPA for the Thames Estuary and Marshes Ramsar site? If not, what should the Applicant be using in the absence of site-specific conservation objectives?

3.2 The Applicant's assessment

- 3.2.1 The European sites for which LSE were identified (and listed in RIES, Paragraph 2.4.4) were further assessed by the Applicant to determine if they could be subject to AEoI from the Proposed Development, either alone or in combination. The outcomes of the Applicant's assessment of effects on integrity are summarised in HRA Report Section 7.4 [APP-487] and within a 'without prejudice' assessment on air quality submitted at DL2 [REP2-068].

Mitigation measures

- 3.2.2 The Applicant's HRA Report identified mitigation measures in Section 7.1 [APP-487].
- 3.2.3 These mitigation measures are secured through two documents: a Register of Environmental Actions and Commitments (REAC) within the Code of Construction Practice [APP-336 and REP6-042] and, for the habitat

enhancement areas for FLL, the Design Principles document [APP-516, REP3-110, REP4-146, REP6-046].

- 3.2.4 No mitigation was identified in order to reach the 'without prejudice' conclusions of no AEOI for North Downs Woodlands SAC. However, the Applicant proposed 'without prejudice' mitigation measures in relation to Epping Forest SAC [APP-487]. This takes the form of a proposed speed reduction westbound between J27 and J26 of the M25. This is described further in Table 3.1 of this RIES.

Sites for which the Applicant concluded no AEOI

- 3.2.5 The Applicant concluded in its HRA Report [APP-487] that the Proposed Development would not adversely affect the integrity of any of the European sites and features assessed, either alone or in combination with other projects or plans.
- 3.2.6 The Applicant's conclusions in respect of the following European sites were disputed by IPs and questioned by the ExA during the course of the Examination:
- Thames Estuary and Marshes SPA;
 - Thames Estuary and Marshes Ramsar site;
 - Epping Forest SAC; and
 - North Downs Woodlands SAC.
- 3.2.7 This is dealt with in the following sections of this RIES.

3.3 Examination matters

- 3.3.1 NE confirmed in its SoCG [APP-099] that it agreed with the Applicant's conclusions of no AEOI with the exception of the following matters:
- the conclusions of no AEOI without mitigation in place for operational air quality impacts on Epping Forest SAC; and
 - agreement to no AEOI only where details of the design of the proposed wetland creation at Coalhouse Point as mitigation for construction effects on FLL to Thames Estuary and Marshes SPA could be developed and secured.
- 3.3.2 As noted in Section 2 of this RIES, NE also initially disputed that there would be no LSE from air quality on North Downs Woodlands SAC. The Applicant's updated 'without prejudice' air quality document provided at DL2 [REP2-068] included an assessment of effects on integrity for this site. The Applicant concluded [REP2-068] that there would be no AEOI on North Downs Woodlands SAC from air quality effects.
- 3.3.3 NE confirmed in its DL4 response [REP4-324] that it continued to dispute the Applicant's conclusion of no AEOI on North Downs Woodlands SAC following the submission of the updated document [REP2-068].

3.3.4 Matters raised in the Examination to date, or for which the ExA seeks clarity in relation to AEOI, are summarised in RIES Table 3.1 below.

Overall approach to in-combination air quality methodology

3.3.5 In addition to the specific issues discussed above, several IPs disputed the Applicant's approach to the methodology for the in-combination air quality assessment which are relevant to all sites considered in the Applicant's Stage 2 assessment.

3.3.6 [APP-487 Section 4.3] sets out the Applicant's approach to assessing in-combination effects. This states that projects included in the in-combination assessment were taken from ES Chapter 16: Cumulative Effects Assessment [APP-154]. The short list of projects used for the assessment is detailed in ES Appendix 16.2 [APP-484] and their locations are depicted on ES Figure 16.2 [APP-330]. The HRA Report also describes how the Applicant included permitting information gathered from the Environment Agency (EA) in July 2020 to inform the list of projects and plans considered.

3.3.7 The Applicant also supplied a technical note at DL2 [REP2-008, Annex C.12] to respond to NE's pre-application advice on the air quality assessment.

3.3.8 Several other IPs (see Table 3.1 below) also submitted representations on the Applicant's approach to determining which projects to include in the assessment. These concerns included:

- traffic generating projects not operational at the opening year (2030) for the Proposed Development did not appear to be included and thus whether a worst-case year had been adopted for the assessment;
- the methodology used a general national growth figure for traffic rather than traffic figures for developments in Local Plans, and may not be sufficiently precautionary; and
- the methodology would exclude consideration of any non-road-based nitrogen emitting developments if they were not controlled by an EA permit (such as small agricultural sites held on the local planning portal that could have locally important emissions).

3.3.9 In addition to raising concerns about the in-combination methodology, NE originally raised concerns [REP1-262] that the Applicant had not considered NO_x and ammonia separately in its assessment and had not addressed nitrogen deposition irrespective of NO_x. NE considered [REP5-109] that the Applicant's 'without prejudice' assessment provided at DL2 [REP2-068] addressed this matter, but that concerns remained about the approach overall to in-combination assessment. NE suggested the use of relevant Site of Special Scientific Interest (SSSI) impact risk zones as a means of identifying potential projects for the assessment.

3.3.10 IPs' concerns remained outstanding at the time of writing, as noted in NE's response at DL4 [REP4-324] and DL5 [REP5-109] and Tonbridge and

Malling Borough Council's response at DL3 [REP3-214] on the Applicant's approach to the in-combination assessment.

QR10: To Local Authorities – do your remaining concerns on the wider traffic modelling have a bearing on the Applicant's position in relation to its HRA conclusions?

QR11: To the Applicant: Noting further transport modelling information is due to be submitted into the Examination at Deadline 6a, please provide commentary as to any implications this may have for the HRA.

- 3.3.11 The Applicant has maintained its position throughout the Examination to date, stating its methodology is robust, follows relevant guidance and provides a worse-case year suitable for the HRA assessment [REP6-118]. The Applicant deems that no reasonable scientific doubt exists in relation to the conclusions of the HRA, and the use of growth factors to be appropriate and precautionary as a means of identifying future traffic numbers. It also notes that the differences between Local Plans and the Lower Thames Crossing modelling are due to the differing purpose and methods between the two and that Local Plans will allocate sites above their needs that will ultimately not be developed.
- 3.3.12 This matter has been discussed within hearings and outside the examination between IPs. At DL6 [REP6-118], the Applicant noted that NE's DL5 response [REP5-109] introduced substantive new information and would therefore require additional time to consider before the Applicant could supply a full response. The Applicant has stated that further work will be carried out and reported at DL7 and DL8, including submission of an updated HRA Report and updated SoCG with NE (after the publication of this RIES).

Table 3.1: Issues raised in the Examination to date by the ExA and IPs in relation to the Applicant's assessment of effects on integrity (alone and in-combination)

ID	Potential impact pathway	Details of issue	ExA observation/ question
Thames Estuary and Marshes SPA / Thames Estuary and Marshes Ramsar site			
1	Air quality - habitat degradation - construction	<p>The Applicant predicted [REP2-068] that an increase in NO_x during the construction of the Proposed Development would result in an exceedance of the NO_x critical level (CL) at both sites during the first two years of construction.</p> <p>Due to the limited time during which effects would occur and the small area of qualifying feature habitat involved, the Applicant concluded that the 'maintain' target for air quality for the SPA / Ramsar site would not be affected by the Proposed Development and therefore that the construction of the Proposed Development would not undermine the site's conservation objectives. It concluded that the Proposed Development either alone or in-combination with other plans or projects would not result in AEOI.</p> <p>NE [REP5-109] highlighted several areas where additional evidence would be required in order to agree to the Applicant's conclusions of no AEOI either alone or in-combination. As described in RIES Table 2.3, NE [REP5-109] also did not agree to the Applicant's conclusions of no LSE from this impact pathway from ammonia and nitrogen deposition and that both should therefore be considered in the assessment of effects on integrity.</p>	<p>This matter remains unresolved at the point of publication of the RIES.</p> <p><u><i>QR12: To the Applicant: without prejudice to your position but taking work in progress up to DL8 into account, what measures would you propose to deliver to respond to a possible AEOI (if such cannot be excluded) and how would those measures be secured?</i></u></p>

ID	Potential impact pathway	Details of issue	ExA observation/ question
		<p>No other IPs have commented on or disputed the conclusions of no AEoI from this impact pathway.</p> <p>The Applicant has stated that further work will be carried out in light of NE's comments and reported at DL7 and DL8.</p>	
2	Recreational disturbance / visual disturbance / noise and vibration disturbance to FLL - construction and operation	<p>The Applicant has proposed mitigation [APP-487] in the form of two parcels of land within the Order Limits at Coalhouse Point and at the Metropolitan Police Firing Range to provide wetland habitat for qualifying bird species displaced from FLL by the Proposed Development. These were illustrated on the Environmental Masterplan [APP-159 to APP-168, REP3-098 to REP3-101, and REP4-124 to REP4-129] and secured through the Design Principles document [APP-516, REP3-110, REP4-146 and REP6-046].</p> <p>Comments on timing of wetland creation</p> <p>Kent County Council [REP1-243] agreed with the Applicant's proposals for the firing range site subject to the timing of works being secured to avoid sensitive times of year for birds. Essex Wildlife Trust [REP1-227] and NE [REP1-262] also highlight construction timing as an important consideration. Essex Wildlife Trust [REP1-227] also noted that mitigation should be fully ecologically functional prior to construction of the Proposed Development.</p> <p>ExQ1 [PD-029] asked whether seasonal work restrictions would affect the creation of habitat. The Applicant [REP4-185] considered that if the over-wintering and</p>	<p>Matters remain outstanding to confirm the mitigation for Thames Estuary and Marshes SPA and Ramsar site.</p> <p><u><i>QR13: To the Applicant: Please demonstrate where you have ensured that adequate time is allowed for the construction of ecological functioning habitat at Coalhouse Point is secured.</i></u></p> <p><u><i>QR14: To MMO and PLA: please provide feedback on the Applicant's current proposals [REP5-034] (Table 2.1, page 22 final line) for the water inlet structure at Coalhouse Point, specifically on the proposed choice of control structures. Do the MMO and PLA have any comment on the acceptability of the design? Can the MMO</i></u></p>

ID	Potential impact pathway	Details of issue	ExA observation/ question
		<p>breeding seasons were avoided then there would not be a sufficient time window to implement the habitat creation.</p> <p>NE [REP5-109] noted the difficulties in seasonal restrictions to work but advised it expected that phasing work to periods when disturbance would be less impactful on breeding and non-breeding birds should be further explored. NE's DL6 response [REP6-152] identified that it has been discussing the wetland at Coalhouse Point and the timing of the works with the Applicant. It advised it is reviewing a Technical Note from the Applicant and expects to provide its comments to the ExA on this matter shortly.</p> <p>The Applicant [REP4-185] considered that, in terms of implementing the habitat creation, once scrapes and ditches are filled they would be ecologically functional and referred back to the outline Landscape and Ecology Management Plan [REP4-140] for details of the management typologies. It is noted that these documents do not set out timeframes for such work to be undertaken and completed.</p> <p>Design of a water supply and control structure</p> <p>The Marine Management Organisation (MMO) [APP-098] and Thurrock Council [REP1-281] both noted they were in discussion with the Applicant on the proposed water control structures required to provide water for the proposed wetland at Coalhouse Point.</p> <p>Provision for water control structures at Coalhouse Point is secured as part of the licensable marine activities in</p>	<p><i><u>provide any comments on the management and monitoring of such structures, confirming whether this would fall under their remit and whether this is acceptable?</u></i></p> <p><i><u>QR15: To Thurrock Council: Please provide an update on your position on the potential for use of the existing moat infrastructure to supply water to the Applicant's wetland at Coalhouse Point.</u></i></p> <p><i><u>QR16: To the EA: Are you satisfied with the approach and conclusions of the Applicant's FRA for the works at Coalhouse Point supplied at Deadline 6 [REP6-102], including the proposal for an inspection and maintenance plan at detailed design stage?</u></i></p> <p><i><u>QR17: To the EA: Noting your initial preference was to avoid a water supply structure that would breach the existing flood defences, have you any</u></i></p>

ID	Potential impact pathway	Details of issue	ExA observation/ question
		<p>Schedule 15 of the draft DCO [REP5-024]. NE stated [REP1-262] that it was unable to agree with the conclusion of AEOI on FLL for Thames Estuary and Marshes SPA without further information on the deliverability and viability of Coalhouse Point.</p> <p>The EA [REP1-225] described how it has worked with the Applicant to secure a supply of water for a proposed tidal exchange structure at Coalhouse Point needed to create the required wetland habitat. It expressed a preference for the Applicant to use an existing drain for this water supply to avoid disturbance to existing flood defence embankments. NE [REP3-193] advised that water should be sourced from a tidal exchange structure in the sea wall to provide a saline water supply. At DL5 [REP5-034] the choice of a water control structure was still a matter 'under discussion' with the EA but no further update was supplied by the Applicant on any progress that has been made.</p> <p>The Applicant supplied further information on the licensing route for this water supply in [REP4-098] and the proposed design of a new water level control inlet structure through the existing flood defences in Annex C.8 of its SoCG [REP5-034]. In [REP4-194] it considers this to be a feasible measure and noted that licensing would be determined as part of detailed design and informed by water demand estimates. It noted that the alternative of using existing infrastructure within Coalhouse Fort moat would require a</p>	<p><i><u>further comments to make on the Applicant's decision to proceed with this option? What additional information, if any, do you consider could be required in order for this approach to be feasible?</u></i></p> <p><i><u>QR18: To NE, what additional information, if any, do you consider is needed to demonstrate that the Applicant's proposed wetland mitigation at Coalhouse Point is sufficiently progressed, deliverable and secured? Is the current level of detail sufficient to support its conclusions of no AEOI on Thames Estuary and Marshes SPA and Ramsar site?</u></i></p> <p><i><u>QR19: To all IPs: Are there sufficient management, monitoring and control processes in place to ensure that the proposed wetland will meet its objectives?</u></i></p>

ID	Potential impact pathway	Details of issue	ExA observation/ question
		<p>legal agreement with Thurrock Council but that an agreement may not be achieved within the DCO timescales.</p> <p>The Applicant's Flood Risk Assessment (FRA) at DL6 [REP6-102] concluded that the new wetland would not have an adverse impact on flooding elsewhere, and notes that an inspection and maintenance plan would be devised at detailed design to address residual risks of the control structure failing. NE noted in its DL6 response [REP6-152] that it continues to work with the Applicant on the mitigation proposals.</p> <p>In its DL6 response, and to address actions raised following ISH9 [EV-075], NE noted that works to install the water control structure would have potential to disturb wintering SPA birds using the foreshore. It has indicated further amendments to existing mitigation measures (specifically REAC commitment HR011) are required and this remains in discussion with the Applicant with a further update expected at DL7.</p>	<p><u>QR20: To the Applicant and NE: Please provide full commentary on the timing of the works for wetland creation at Coalhouse Point by Deadline 8. It would assist the ExA if the updated SoCG could identify where an agreed position has been reached.</u></p>
Epping Forest SAC			
3	Air quality - habitat degradation - operation	<p>The Applicant concluded [APP-487] no AEoI on Epping Forest SAC either alone or in-combination with other plans or projects on the basis that the Proposed Development would only contribute a very small amount of nitrogen deposition to the site.</p> <p>Concentrations of NO_x and ammonia at Epping Forest were identified as already exceeding the critical level without the</p>	<p>This matter remains unresolved at the point of publication of the RIES.</p> <p><u>QR21: To the Applicant: What concerns do you have about NE's proposed approach to the</u></p>

ID	Potential impact pathway	Details of issue	ExA observation/ question
		<p>Proposed Development in place. The Applicant's surveys also identified that although a small area of qualifying habitat (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>IliciFagenion</i>) and stag beetle (<i>Lucanus cervus</i>)) was present within 200m of the ARN, it was of low quality and no nitrogen sensitive species were present.</p> <p>Future predictions of nitrogen deposition took account of the proposed ban on petrol and diesel engines coming into place by 2030. With this assumption, the Applicant considered that the contribution of the Proposed Development to the critical level exceedances and the area of habitat affected would therefore be very small and result in no measurable change to habitats given no nitrogen sensitive species were present in the affected area.</p> <p>As a result, no AEOI either alone or in-combination with other plans and projects were concluded from this pathway. This position was maintained following the Applicant's 'without prejudice' air quality assessment sensitivity test presented at DL2 [REP2-068].</p> <p>NE disputed the Applicant's conclusions [RR-0784 and APP-099]. Its view was that the SAC, in its current condition, exceeds the critical level for nitrogen deposition and the critical level for ammonia. The supplementary advice that supports the conservation objectives for the site is to "Restore as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or</p>	<p><u><i>introduction of the speed limit?</i></u></p> <p><u><i>QR22: To the Applicant: Can you set out why you do not consider that the Proposed Development will prevent or slow the restoration of site-specific critical levels and critical loads? What does the Applicant consider to be the implications of the Dutch Nitrogen Case for the conclusion of no AEOI?</i></u></p>

ID	Potential impact pathway	Details of issue	ExA observation/ question
		<p><i>Level values given for this feature of the site on the Air Pollution Information System".</i></p> <p>In its HRA Report [APP-487], the Applicant explained that NE disagreed with its conclusions for Epping Forest SAC. The Applicant submitted a 'without prejudice' mitigation proposal within its HRA Report of a reduced speed limit on the M25 westbound between Junctions 26 and 27 for four years following completion of the construction phase and until the total emissions of NO_x with the Proposed Development fall below the total emissions at opening year without the Proposed Development in place. It stated that NE considered that mitigation was needed to reach the conclusions of no AEOI and this was the position taken in its SoCG with NE [APP-099], where NE agrees that the mitigation would be effective in addressing the identified effect on integrity, subject to securing the measure through the REAC and an appropriate monitoring and feedback process being in place.</p> <p>In its DL5 response [REP5-109], NE states that further understanding of the assessment of NH₃ was needed. It suggested that long term pollution at the site, including any additional pollution from the Proposed Development, hinders the recovery of the site and establishment of species typical of the qualifying feature. It maintained its position that the Proposed Development would lead to an AEOI from habitat degradation for all assessed pollutants without mitigation in place and that an appropriate monitoring and feedback mechanism to identify its effect was needed. NE also noted</p>	

ID	Potential impact pathway	Details of issue	ExA observation/ question
		<p>the uncertainty to the assessment arising from recent government announcements on the phasing out of petrol and diesel cars and that this could change the length of time that mitigation was required for all pollutants.</p> <p>In response to ExQ2 [PD-040], the Applicant [REP6-117] concluded that the change in timescales for the ban on petrol and diesel cars would have no effect on its assessment conclusions. It continues to maintain [REP6-118] that no mitigation is required to reach a conclusion of no AEOI for this site. However, as set out in paragraph 3.3.12 of this RIES, the Applicant deemed that NE's response contained substantive new information requiring further consideration and that a further response and SoCG update will be provided at DL7 and DL8.</p> <p>No further representations were received at DL6 on this matter from IPs. NE also notes [REP6-155 response to ExQ2] that a response to the Applicant's position on all HRA matters will be supplied through SoCG at both DL7 and DL8.</p>	
North Downs Woodlands SAC			
4	Air quality – habitat degradation - operation	<p>As noted in RIES Paragraphs 3.3.5 to 3.3.10, the approach to air quality has been disputed by IPs and been subject to additional 'without prejudice' assessment by the Applicant at DL2 [REP2-068]. The Applicant's 'without prejudice' conclusions at DL2 considered that there was potential for a LSE from this impact pathway (alone and in-combination) but concluded no AEoI from project-alone effects due to the</p>	This matter remains unresolved at the point of publication of this RIES.

ID	Potential impact pathway	Details of issue	ExA observation/ question
		<p>effects being considered 'inconsequential'. No in-combination assessment was therefore carried out for this site.</p> <p>At DL5 [REP5-109], NE disputed the Applicant's 'without prejudice' conclusions. It disagreed with the Applicant's conclusions due to the in-combination approach, considers that the effect of NH₃ on integrity has not been assessed and queried the Applicant's conclusions on the lack of nitrogen sensitive features closest to the road. NE considered that the full impact of nitrogen deposition has not been calculated.</p> <p>NE considered [REP5-109] that it was likely to be able to exclude an AEoI nevertheless, because the SAC qualifying features are not within the area experiencing the greatest level of pollution, but this can only be confirmed once the Applicant reviews its in-combination approach and conclusions.</p> <p>The Applicant [REP6-118] questioned whether the additional evidence requested by NE would provide any further evidence such that it would further inform the outcome of the HRA.</p> <p>No further representations were received at DL6 on this matter from IPs. NE [REP6-155] and the Applicant [REP6-118] note that a response on all HRA matters will be supplied through SoCG at both DL7 and DL8.</p>	

4 CONCLUDING REMARKS

- 4.0.1 This RIES is based on information submitted throughout the Examination by the Applicant and IPs, up to DL6 (31 October 2023), in relation to potential effects on European sites. It should be read in conjunction with the Examination documents referred to throughout.
- 4.0.2 The intention and purpose of the RIES is to ensure that IPs including the ANCB are consulted formally for the purposes of Habitats Regulations matters, having regard to the legal duty upon the competent authority to do so.
- 4.0.3 The ExA notes that a number of issues discussed in this RIES remains outstanding at the time of publication. The ExA looks forward to submissions of an updated HRA Report, SoCGs and PADS (in relation to any matters that remain outstanding) to provide updated positions from relevant IPs, which are anticipated to be submitted after publication of the RIES.
- 4.0.4 To date in the Examination, the matters identified in Table 3.1 of this RIES in respect of disputed AEoIs remain unresolved. The ExA seeks responses from the Applicant and ANCB, where indicated, to provide clarity on the outstanding matters. It will assist the ExA and the SoS that if matters do remain outstanding in circumstances where the Applicant considers that there is no AEoI, but NE cannot exclude such an effect, the Applicant provides a 'without prejudice' case in which the nature of actions to address the unexcluded concern are described.
- 4.0.5 Comments on the RIES and responses to the questions within it must be submitted for Deadline 8 (5 December 2023).

ANNEX A1. EXA'S UNDERSTANDING OF SCREENING AND ADVERSE EFFECTS CONCLUSIONS AT POINT OF RIES PUBLICATION

The Table in this Annex provides a summary of the ExA's understanding of the Applicant's conclusions and the position reached with the Appropriate Nature Conservation Body (ANCB) at the point of publication of the RIES.

Feature	Potential impact (Construction and Operation)	Likely Significant Effect? (Y/N)		Adverse Effect on Integrity? (Y/N)	
		Applicant's conclusion (alone or in combination)	Agreement with ANCB? ⁴	Applicant's conclusion (alone or in combination)	Agreement with ANCB?
Thames Estuary and Marshes SPA					
Internationally important populations of regularly occurring Annex 1 species: <i>Avocet Recurvirostra avosetta</i> Hen Harrier <i>Circus cyaneus</i> . Internationally important populations of regularly	(Species using Functionally linked land) Change in air quality – dust emissions – construction Changes in surface water quality and	N	Y [APP-099]	-	-

⁴ Applies to impacts from the Proposed Development alone and in combination, unless otherwise stated.

Feature	Potential impact (Construction and Operation)	Likely Significant Effect? (Y/N)		Adverse Effect on Integrity? (Y/N)	
		Applicant's conclusion (alone or in combination)	Agreement with ANCB? ⁴	Applicant's conclusion (alone or in combination)	Agreement with ANCB?
occurring migratory species: Ringed Plover <i>Charadrius hiaticula</i> Grey Plover <i>Pluvialis squatarola</i> Dunlin <i>Calidris alpina</i> <i>alpina</i> Knot <i>Calidris canutus</i> <i>islandica</i> Black-tailed Godwit <i>Limosa limosa islandica</i> Redshank <i>Tringa totanus totanus</i> An internationally important assemblage of waterfowl.	quantity – construction / operation Introduction/spread of Invasive Non- Native Species – terrestrial and marine environment Vehicle collision with species - operation Species collision with overhead infrastructure – Operation				
Features as above	Changes in underwater noise and vibration –	N	N	?	?

Feature	Potential impact (Construction and Operation)	Likely Significant Effect? (Y/N)		Adverse Effect on Integrity? (Y/N)	
		Applicant's conclusion (alone or in combination)	Agreement with ANCB? ⁴	Applicant's conclusion (alone or in combination)	Agreement with ANCB?
	tunnel construction only Changes in light levels (construction / operation)				
Features as above	(Species using functionally linked land) Changes in noise and vibration – construction and operation Changes in visual disturbance – construction Change in recreational pressure (Tilbury Fields)	Y	Y [APP-099]	N	Y [APP-099]

Feature	Potential impact (Construction and Operation)	Likely Significant Effect? (Y/N)		Adverse Effect on Integrity? (Y/N)	
		Applicant's conclusion (alone or in combination)	Agreement with ANCB? ⁴	Applicant's conclusion (alone or in combination)	Agreement with ANCB?
	Changes in visual disturbance – operation Change in recreational disturbance – construction and operation				
Thames Estuary and Marshes Ramsar site					
<u>Ramsar Criterion 2:</u> The site supports one endangered plant species and at least 14 nationally scarce plants of wetland habitats. The site also supports more than 20 British Red Data Book invertebrates <u>Ramsar Criterion 5:</u>	Change in air quality – dust emissions – construction Changes in groundwater quality and quantity	N	Y [APP-099]	-	-

Feature	Potential impact (Construction and Operation)	Likely Significant Effect? (Y/N)		Adverse Effect on Integrity? (Y/N)	
		Applicant's conclusion (alone or in combination)	Agreement with ANCB? ⁴	Applicant's conclusion (alone or in combination)	Agreement with ANCB?
Waterfowl assemblage <u>Ramsar Criterion 6:</u> Ringed plover <i>Charadrius hiaticula</i> Black-tailed godwit <i>Limosa limosa islandica</i> Grey plover <i>Pluvialis squatarola</i> Red knot <i>Calidris canutus islandica</i> Dunlin <i>Calidris alpina alpina</i> Common redshank <i>Tringa totanus tetanus</i>	- tunnel construction and operation				
<u>Ramsar Criterion 5:</u> Waterfowl assemblage <u>Ramsar Criterion 6:</u> Ringed plover <i>Charadrius hiaticula</i>	Changes in noise and vibration – construction Changes in visual disturbance – construction	Y	Y [APP-099]	N	Y [APP-099]

Feature	Potential impact (Construction and Operation)	Likely Significant Effect? (Y/N)		Adverse Effect on Integrity? (Y/N)	
		Applicant's conclusion (alone or in combination)	Agreement with ANCB? ⁴	Applicant's conclusion (alone or in combination)	Agreement with ANCB?
Black-tailed godwit <i>Limosa limosa islandica</i> Grey plover <i>Pluvialis squatarola</i> <u>Red knot</u> <i>Calidris canutus islandica</i> <u>Dunlin</u> <i>Calidris alpina alpina</i> <u>Common redshank</u> <u>Tringa totanus tetanus</u>	Changes in noise and vibration – Operation Changes in recreational pressure - operation				
<u>Ramsar Criterion 2:</u> The site supports one endangered plant species and at least 14 nationally scarce plants of wetland habitats. The site also supports more than 20 British Red Data Book invertebrates <u>Ramsar Criterion 5:</u> Waterfowl assemblage	Land take from site Changes in surface water quality and quantity – construction	Y	Y [APP-099]	N	Y [APP-099]

Feature	Potential impact (Construction and Operation)	Likely Significant Effect? (Y/N)		Adverse Effect on Integrity? (Y/N)	
		Applicant's conclusion (alone or in combination)	Agreement with ANCB? ⁴	Applicant's conclusion (alone or in combination)	Agreement with ANCB?
<u>Ramsar Criterion 6:</u> Ringed plover <i>Charadrius hiaticula</i> Black-tailed godwit <i>Limosa limosa islandica</i> Grey plover <i>Pluvialis squatarola</i> Red knot <i>Calidris canutus islandica</i> Dunlin <i>Calidris alpina alpina</i> Common redshank <i>Tringa totanus tetanus</i>					
<u>Ramsar Criterion 5:</u> Waterfowl assemblage <u>Ramsar Criterion 6:</u> Ringed plover <i>Charadrius hiaticula</i> Black-tailed godwit <i>Limosa limosa islandica</i>	(Species using functionally linked land) Changes in surface water quality and quantity – operation	N	Y [APP-099]	-	-

Feature	Potential impact (Construction and Operation)	Likely Significant Effect? (Y/N)		Adverse Effect on Integrity? (Y/N)	
		Applicant's conclusion (alone or in combination)	Agreement with ANCB? ⁴	Applicant's conclusion (alone or in combination)	Agreement with ANCB?
Grey plover <i>Pluvialis squatarola</i> Red knot <i>Calidris canutus islandica</i> Dunlin <i>Calidris alpina alpina</i> Common redshank <i>Tringa totanus tetanus</i>	Introduction/spread of Invasive Non- Native Species – terrestrial and marine environment Vehicle collision with species during operation Species collision with overhead utilities infrastructure – operation Change in recreational disturbance – construction and operation				

Feature	Potential impact (Construction and Operation)	Likely Significant Effect? (Y/N)		Adverse Effect on Integrity? (Y/N)	
		Applicant's conclusion (alone or in combination)	Agreement with ANCB? ⁴	Applicant's conclusion (alone or in combination)	Agreement with ANCB?
	Change in visual disturbance – operation Change in light levels – construction / operation				
<u>Ramsar Criterion 5:</u> Waterfowl assemblage <u>Ramsar Criterion 6:</u> Ringed plover <i>Charadrius hiaticula</i> Black-tailed godwit <i>Limosa limosa islandica</i> Grey plover <i>Pluvialis squatarola</i> Red knot <i>Calidris canutus islandica</i> Dunlin <i>Calidris alpina alpina</i>	Changes in noise and vibration – underwater / above ground – tunnel construction only	Y	N [APP-099]	?	?

Feature	Potential impact (Construction and Operation)	Likely Significant Effect? (Y/N)		Adverse Effect on Integrity? (Y/N)	
		Applicant's conclusion (alone or in combination)	Agreement with ANCB? ⁴	Applicant's conclusion (alone or in combination)	Agreement with ANCB?
Common redshank <i>Tringa totanus tetanus</i>					
Epping Forest SAC					
Atlantic acidophilous beech forests with <i>Ilex</i> and sometimes also <i>Taxus</i> in the shrublayer (<i>Quercion robori- petraeae</i> or <i>IliciFagenion</i>) Stag beetle <i>Lucanus cervus</i>	Change in air quality - vehicle emissions - operation	Y	Y [APP-099]	N	N
North Downs Woodlands SAC					
<i>Asperulo-Fagetum</i> beech forests <i>Taxus baccata</i> woods of the British Isles	Change in air quality - vehicle emissions - operation	N	N	N⁵	N

⁵ Applicant's AEOL conclusion [REP2-068] on a 'without prejudice' basis