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Our ref: 456687
Your ref: TR010032



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Dear Mr Smith

**Application by National Highways for an Order Granting Development Consent for the Lower Thames Crossing
Natural England's response to Deadline 7
Natural England User Code: 20034784**

Natural England is pleased to provide our Deadline 6 response for the Lower Thames Crossing Examination within the annexes appended to this letter.

For ease, we have provided our comments in the following Annexes to this letter:

- Annex 1: Updated Statement of Common Ground
- Annex 2: Updated Principal Areas of Disagreement
- Annex 3: Comments on the Applicant's submissions at Deadline 6
- Annex 4: Natural England's comments on the Applicant's response to ExQ2
- Annex 5: Natural England's advice in relation to status of woodland at 'The Wilderness'
- Annex 6: Request to be heard at Compulsory Acquisition Hearings
- Annex 7: Confirmation of Natural England's attendance at the Issue Specific Hearings

Natural England hopes our Deadline 7 comments are helpful and we will continue to work collaboratively with the Applicant to try and resolve the outstanding matters detailed below.

Yours sincerely

James Seymour
Deputy Director, Sussex and Kent Team

John Torlesse
Deputy Director, West Anglia Team

Email ltc@naturalengland.org.uk

1 Annex 1: Updated Statement of Common Ground

- 1.1 Natural England has worked collaboratively with the Applicant and have agreed our updated Statement of Common Ground. We understand the Applicant will be submitting this at Deadline 7.

2 Annex 2: Updated Principal Areas of Disagreement

- 2.1 Natural England has not prepared a Principal Areas of Disagreement document as we consider that the areas of disagreement are covered fully within our updated Statement of Common Ground.

3 Annex 3: Comments on the Applicant's submissions at Deadline 6

Explanatory Memorandum version 4.0

- 3.1 Examination Document REP6-013 refers to the passive provision for a Tilbury link road at paragraph 6.11.5. The passive provision for a Tilbury link road is also set out within draft DCO v7.0. In our Deadline 6 response (Examination Document REP6-152) Natural England indicated at paragraph 7.17 that it would comment on this new provision in our Deadline 7 response (this response). Our comments are made below.
- 3.2 Natural England understands that the project will enable other highways schemes, either directly or indirectly. It is important that such projects are clearly identified, such that the cumulative implications of the Lower Thames Crossing with other projects can be properly understood.
- 3.3 With respect to the Tilbury Link Road (TLR), we understand that this was removed from the Project by the Applicant through the iterative design process. Therefore, it does not form part of the submitted scheme, and its impacts have not been assessed as part of the submission. We understand that a TLR has been intimated as part of the Road Investment Strategy 2 as a RIS3 pipeline project, signalling the early stages of the development process, but that this is not a commitment to construct particular projects. Whilst we understand that there is a desire to ensure that the Lower Thames Crossing project design is compatible with the requirements of a TLR, we wish to make it clear that this should not be regarded as establishing any indicative approval or allocation for such a project, which would need to be subject to its own detailed design and assessment process, including early consultation with statutory agencies including Natural England. We are not aware of any indicative route alignment(s) for a TLR and understand that any works to integrate a TLR into the Lower Thames Crossing scheme do not prejudice or constrain route alignment options. If, in designing-in passive provision for a TLR, the Lower Thames Crossing is, in effect, constraining future TLR route alignment options ahead of time, this should be made clear in the submission so that interested parties can fully understand the implications of such provision, and comment accordingly.

Figure 7.19 - Photomontages Winter Year 1 and Summer 15

- 3.4 Natural England welcomes the submission of the additional visualisations for Viewpoint S-11 (Examination Document REP6-037), following the comments in Section 6.1.59 of our Written Representation (Examination Document REP1-262).
- 3.5 Given the apparent scale of change that the visualisations indicate, Natural England considers it appropriate for the Applicant to provide an update (or addendum) to their Landscape and Visual Impact Assessment to reflect these additional visualisations. Once this information is available, Natural England will be pleased to provide further advice to the Examining Authority.

Code of Construction Practice (CoCP), First Iteration of Environmental Management Plan v6.0

- 3.6 With regard to discussion with the Applicant on the biodiversity net gain (BNG) metric, Natural England notes that an additional item (TB030) has been inserted within Examination Document REP6-039). Please see our response on page 9 of this letter. This matter has been agreed and the next iteration of our Statement of Common Ground with the Applicant will be amended accordingly.

- 3.7 Natural England has set out within our Written Representations (Examination Document REP1-262, paragraph 7.2.12) that the Applicant should make further provision for high-value invertebrate habitat within the CoCP, and specifically the Register of Environmental Actions and Commitments. The Applicant is working with Natural England to develop a 'heat map' to identify areas of especially high value (i.e. nationally important), but they propose that this will only be for consideration at the detailed design stage (i.e. at the discretion of the contractor). Whilst we support the preparation of a 'heat map', Natural England is concerned that the Project has not taken sufficient steps to safeguard nationally important habitats through avoidance as a first principle, where it reasonably could have done (especially since third party data supplied to the Applicant by the Port of Tilbury has precisely identified where these are). These reports are supplied as Appendix 3.1 and 3.2 to this letter.
- 3.8 Natural England is seeking that Control Documents should be amended to properly integrate provision for these habitats supporting nationally important assemblages of invertebrates. With respect to the CoCP REAC, we note that similar provision has been made for avoidance of the water vole receptor site via commitment TB023. Natural England proposes that equivalent specific provision is made for the footings of the Tilbury 2 aggregates conveyor to be carefully sited during installation to avoid the area of existing Pulverised Fuel Ash (PFA) habitats within this area. Natural England is happy to work with the applicant on an appropriate form of words to secure a new Commitment to safeguard that area in particular. However, it is preferred, that a REAC Commitment (either new or amendment to existing, such as TB002 or TB003 'maintaining integrity of important habitats') specifically references the 'heat map' and an updated Environmental Masterplan which spatially identifies specific areas for avoidance in-principle.
- 3.9 Related to the above, Natural England is also aware that additional relevant third-party data exists for the Ashfield Complex (covering the Ashfields 'C' area) which was referenced within the Port of Tilbury Relevant Representation (Examination Document reference RR-0863, at paragraph 7.23). This is understood to include surveys for terrestrial invertebrates by Ingrebourne Valley Limited (IVL), who are an Interested Party to the LTC examination. This information is anticipated to be relevant to the outcomes described above, which the Applicant has made efforts to obtain (described in their Statement of Common Ground with Natural England (Examination Document REP5-038), however we understand that their requests to IVL have been denied. Natural England respectfully requests that the Examining Authority seek such data from IVL, which would helpfully inform environmental outcomes in the area of the north portal.

Design Principles v4.0

- 3.10 Natural England notes in the updated Design Principles Document v4.0 (Examination Document REP6-047) that the Applicant is proposing the addition of mammal culverts to the Brewers Road and Thong Lane South green bridges to try and address concerns regarding the severance caused by the local roads (new clause numbers S1.23 and S2.15 respectively).
- 3.11 Whilst Natural England welcomes the Applicant's commitment to address the concerns raised by Interested Parties regarding the lack of connectivity from the green bridges over the local road network, we recommend further clarity is provided. These additional structures have the potential to result in further landscape and ecological impacts, given their location within the Kent Downs Area of Outstanding Natural Beauty (AONB) and the existing habitat adjacent to the transport corridor.

- 3.12 We recommend that the Applicant provides greater clarity on the design of the proposed culverts, their location along with details of any additional ecological and landscape impacts that will result. If additional impacts are likely, then details of the additional mitigation and/or compensation measures required should also be provided. Once this information is available, Natural England will be pleased to provide further comments on the likely effectiveness of the mammal culverts and any ecological and landscape impacts.

Schedule of Changes to the dDCO during Examination v6.0

- 3.13 Natural England notes that We note that Examination Document REP6-074 includes a new sub-article 64 (2) has been inserted: 'Any matter for which the consent of approval of Secretary of State is required under any provision of this Order is not subject to arbitration.'

Applicant's Responses to Interested Party Comments on the dDCO at D5

Disapplication of the Wildlife and Countryside Act 1981

- 3.14 Natural England notes the Applicant's Deadline 6 response regarding the disapplication of the Wildlife and Countryside Act (Examination Document REP6-085). Our position remains as set out in Natural England's response to Deadline 5 (Examination Document REP5-109), Annex B – Disapplication of Wildlife and Countryside Act 1981.
- 3.15 This therefore remains a matter not agreed, which is confirmed within our updated Statement of Common Ground to be submitted by the Applicant at Deadline 7. We support the position recommended to the Secretary of State for the A417, set out in Appendix B of this Annex, which applies the precautionary principle to the A417 Missing Link decision and rejects the disapplication of the Wildlife and Countryside Act. This is particularly relevant where an area impacted by a scheme has potential to be designated as a SSSI.

Applicant's Response to comments made by Natural England at Deadline 5

- 3.16 Having reviewed the Applicant's response (Examination Document REP6-095) to Natural England's submissions at Deadline 5 submissions (Examination Document REP5-109), we have the following observations to make.

Disapplication of Section 28e and 28h of the Wildlife and Countryside Act 1981 (as amended)

- 3.17 Natural England's further advice in relation to the proposed disapplication of our Wildlife and Countryside Act responsibilities is provided above at 3.14-3.15 of this letter.

Road surfacing

- 3.18 Natural England notes the Applicant's response and commitment to ensure that the road surfacing within the Kent Downs AONB, for the lifetime of the project, will be maintained to ensure that the noise emissions are no worse than the surface laid for the Project's opening. Natural England welcomes the confirmation of this within clause (d) of REAC reference NV013 of the updated Register of Environmental Actions and Commitment (Examination Document REP6-037).

Saline lagoon flora and fauna

- 3.19 Natural England notes the Applicant's response to our comments on the possible presence of saline lagoon fauna within the ditch network, and will respond at Deadline 8.

Tunnelling vibration/noise and the marine environment

- 3.20 We concur with the Applicant's agreement that this is a procedural matter that can be addressed via the RIES.

Breeding and wintering birds

- 3.21 Natural England had a productive discussion with the Applicant to progress this matter on the 15 November 2023. The Applicant has agreed to provide clarity on the location where breeding birds associated with the South Thames Estuary and Marshes Site of Special Scientific Interest (SSSI) were recorded during the surveys based upon the existing information within the Environmental Statement. Once this information has been provided, Natural England will be pleased to provide further information. We are hopeful that this clarity will help both parties reach agreement on this matter before the close of the Examination.

Monitoring of success

- 3.22 Natural England has welcomed discussions with the Applicant to try and agree a more holistic approach to monitoring the success of the habitat mitigation and compensation for all ecological features and welcome their agreement to monitoring wider species groups in addition to licensable protected species. We agree with the Applicant that the Advisory Group is an appropriate forum for agreement as to the detail of the indicators of success but would request that the Terms of Reference for the Advisory Group are updated to reflect this additional requirement to be secured post consent.

Caveats on mitigation/adequacy of security

- 3.23 Natural England notes that, in response to our concerns on the certainty of wording within the control documents they advise: 'The Applicant notes Natural England's concern regarding the use of the term 'where reasonably practicable' and will continue to consider what refinement in wording can be developed to provide further comfort. The post-hearing submissions for ISH9 will include consideration of this matter and the Applicant is happy to discuss this further with Natural England'.
- 3.24 Having reviewed the Applicant's post-hearing submissions to ISH9 (Examination Document REP6-090), we welcome confirmation that clarity will be provided at Deadline 7 regarding the use of 'where reasonably practicable' in relation to ancient woodland soils (Section A.3).
- 3.25 As detailed within Annex E to Natural England's Written Representation (Examination Document REP1-262), Natural England has significant concerns by the ambiguity throughout the control documents for numerous ecological and landscape matters. Natural England was assured by the Applicant during a conference call on the 31 August that they would be revisiting the wording within the securing mechanisms and control documents to try and address this concern and we would welcome clarity on when this will be provided.

Nitrogen deposition site – removal of Bluebell Hill and Burham

- 3.26 Natural England notes the Applicant's response to ExQ2 Q5.2.2 (Examination Document REP6-115) in which they consider that the removal of the compensation land at Blue Bell Hill and Burham from the Order limits does not compromise the scheme objectives, their removal appears to have implications for the landscape scale approach.
- 3.27 The majority of the habitat and sites impacted by nitrogen deposition (excluding Habitats Sites covered by the Conservation of Habitats and Species Regulations) fall in Kent whilst the majority of the NDep compensation proposed, before the removal of these two sites, was north of the River. The removal of the land at Blue Bell Hill and Burham further alters this balance and also removes the significant beneficial landscape effect for the Kent Downs AONB. We would therefore expect the Applicant to provide clarity on how the reduced habitat provision still meets the landscape scale approach both north and south of the Thames.

Photomontage reliability

- 3.28 Natural England welcomes the Applicant's examples of schemes where the assessment of landscape and visual impacts and effectiveness of the mitigation at the application stage were evaluated post implementation. Natural England will endeavour to review the projects listed (the A556 Knutsford to Bowdon Improvement and M1 Junctions 10 to 13 hard shoulder running and junction improvements) by Deadline 8.

Landscape character regrading of sensitivity and effects

- 3.29 Natural England has advice in relation to this matter in Annex 4 to this Deadline 7 letter in which we provide a detailed response to the Applicant's comments in relation to ExQ2 Q12.2.1. In summary, Natural England considers that greater evidence on how the refinements to the scheme design have reduced the sensitivity and nature and scale of the impacts.

Representative viewpoints

- 3.30 Natural England has provided details advice in relation to this matter in Annex 4 to this Deadline 7 letter in which we provide a detailed response to the Applicant's comment in relation to ExQ2 12.3.2. In summary, Natural England recommends that greater clarity, evidence and justification for the changes in the assessment are provided by the Applicant to explain the changes in the assessment when the transport corridor along the A2 has not changed significantly between the 2020 and 2022 assessments.

Removal of NDep areas and compliance with the National Policy Statement for National Networks

- 3.31 As detailed in Annex 4 to this letter, Natural England notes the Applicant's response in which they consider that the removal of the compensation land at Blue Bell Hill and Burham from the Order limits does not compromise the scheme objectives, their removal appears to have implications for the landscape scale approach.
- 3.32 The majority of the habitat and sites impacted by nitrogen deposition (excluding Habitats Sites covered by the Conservation of Habitats and Species Regulations) fall in Kent whilst the majority of the NDep compensation proposed, before the removal of these two sites, was north of the River. The removal of the land at Blue Bell Hill and

Burham further alters this balance and also removes the significant beneficial landscape effect for the Kent Downs AONB. We would therefore expect the Applicant to provide clarity on how the reduced habitat provision still meets the landscape scale approach both north and south of the Thames.

Biodiversity Net Gain

3.33 We note the Applicant's confirmation (Table 2.1, page 13, Examination Document REP6-095) that the metric will be rerun after the detailed design stage, that the version used for this rerun will be Metric v3.1, and that this requirement will be secured via a new REAC commitment in the Code of Construction Practice (Examination Document REP5-048) submitted at Deadline 6. We agree that the revised wording in the REAC (TB030, Examination Document REP6-038) captures this commitment and consider this a matter now agreed. Our Statement of Common Ground will be updated accordingly.

Green bridge monitoring

3.34 Natural England has welcomed discussions with the Applicant to try and agree a more holistic approach to monitoring the success of the habitat mitigation and compensation for all ecological features (including habitats on the green bridges) and welcome their agreement to monitoring wider species groups in addition to licensable protected species. We agree with the Applicant that the Advisory Group is an appropriate forum for agreement as to the detail of the indicators of success but would request that the Terms of Reference for the Advisory Group are updated to reflect this additional requirement to be secured post consent.

Air quality and Habitats Regulations Assessment

3.35 Natural England has been working collaboratively with the Applicant, investing significant time, over the last few months on air quality matters. We have made significant progress on some issues and hope to reflect these more fully in our next Statement of Common Ground.

3.36 Natural England does not intend to respond in detail to the Applicant's response to our advice on air quality and Habitats Regulations Assessment matters provided in Examination Documents REP6-085 and REP6-095) as our Deadline 5 documents outlined our advice at the time (Examination Documents REP5-109 and AS-107).

3.37 The Applicants' comments in their response to HRA matters (Examination Document REP6-095) that this is 'new information...which has not been previously raised in the four years of discussion regarding air quality impacts for the Project' is considered extremely misleading. Natural England has requested consideration of ammonia and Ndep (regardless of the NOx concentration) throughout engagement. Concerns with the scope of the in-combination assessment and expectations consistent with our Deadline 5 submission were first set out formally in our EIA Scoping Response on the 1 December 2017, were repeated throughout engagement and were more recently restated in the note on advice provided to the Applicant in April 2023. (Annex A in Annex C12 of our draft Statement of Common Ground, Examination Document REP2-009).

3.38 The applicant's 'without prejudice assessment' (Examination Document REP2-068) submitted at Deadline 2 was the first time the majority of the requested information had been seen by Natural England. Natural England is a science and evidence led organisation and our responses are, therefore, often necessarily reactive to

documents as and when they presented to us. It is impossible for us to predict the minutia of information that will be provided, particularly when dealing with such complex technical subjects as air quality.

- 3.39 Further, it would be inappropriate for us not to mention our concerns purely because we are at a late stage in the examination and what we perceive to be an error or misstep occurs in a document that has not been previously made available to us. For example, many of the 'new issues' identified in the two documents relate to the failure to apply appropriate thresholds and habitat types in the screening of likely significant effects. Such thresholds are well established, and it is beyond Natural England's capabilities to foresee how and when they may be incorrectly applied. Natural England remains committed to working with National Highways to resolve these issues.
- 3.40 The results of the assessment highlighted concerns that likely significant effects to the three European protected sites had not all been identified within the HRA, and adverse effects on site integrity could not be ruled out – based on the new information submitted by the applicant. This was highlighted in Natural England's Deadline 5 response (Examination Document REP5-109).
- 3.41 Since then, engagement has continued, and it is understood the applicant will provide a revised HRA addressing Natural England's outstanding concerns on the methodology of assessment at Deadline 8 – reflecting ongoing and constructive engagement. However, it is understood that this updated HRA will not be updated in time for Natural England to see it before having to submit our Deadline 8 comments. We understand that this updated HRA will build on the assessment within the 'without prejudice assessment' submission but incorporate an amended methodology requested by Natural England.
- 3.42 This should address our concerns over the methodology used to identify likely significant effects, rectify issues over the critical levels and loads used in the assessment, clarify the steps used in the assessment process, and provide further detail within the appropriate assessment of the ecological impact of the pollution generated by the project. The updated HRA will not address Natural England's concerns in relation to the methodology used to undertake the in-combination assessment (a separate technical note has been produced by the applicant justifying their approach in this regard). Neither will it address Natural England's concerns relating to additional nitrogen deposition at Epping Forest, a matter on which we have 'agreed to disagree'.
- 3.43 Natural England recognises a difference in opinion between ourselves and the applicant over whether there is 'reasonable scientific doubt' the proposed development would adversely affect the site integrity – as outlined in section 2 of document 9.153 (Examination Document REP6-118). Natural England considers that uncertainties within the in-combination assessment mean that conclusions cannot be made beyond reasonable scientific doubt as they stand, as outlined in our Deadline 5 response. In addition, there is disagreement over the scale of change in pollution required to cause an ecological impact to a protected site – hence undermining its conservation objectives.
- 3.44 Key points relating to the in-combination assessment are:
- The applicant has not recognised that the DfT TAG guidance allows for an 'alternative scenario' of the model to be run in addition to the core scenario (as outlined in Table 4.1 of Chapter 4 of Combined Modelling and Appraisal Report - Appendix C - Transport Forecasting Package (Examination Document APP-522)

– though no alternative scenario has been run in this case). This can include local plan allocations to provide a more precautionary and locally relevant in-combination assessment. Other Highways projects have included Local Plan allocations in their assessment e.g. M3 Junction 9 NSIP.

- Government guidance on Habitats Regulations Assessment - eg Advice Note 10¹ indicates that the in-combination assessment should include ‘projects identified in the relevant development plan (and emerging development plans – with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited and the degree of uncertainty which may be present’.
- In order to be able to exclude ‘beyond reasonable scientific doubt’ that a project in combination will not adversely affect site integrity – there has to be confidence that all relevant in-combination projects that could affect the relevant protected sites are considered (traffic and non-traffic).
- Doubt over the in-combination assessment does not automatically cast doubt over the conclusions of the HRA. If no adverse effect on integrity is concluded because a site/ feature is not sensitive to nitrogen, that relevant timescales would be too short for an impact to occur or that the relevant part of a site is not qualifying feature, for example, this conclusion would be robust regardless of the in-combination impacts assumed.

3.45 Key points relating to the ecological assessment of site integrity are:

- The consideration of whether the project will undermine the conservation objectives of a European site must take account of any ‘restore’ objective, including an objective to restore the site below its relevant critical levels and critical loads. If a project will delay any wider reduction in pollutant levels, towards this objective – it is likely the project will undermine this objective, and therefore adverse effect on site integrity cannot be excluded.
- Ecological impacts caused by NO_x, ammonia or nitrogen deposition will happen whether or not that pollutant is ‘measurable’. The ‘1% of the relevant critical level or critical load’ threshold to screen for likely significant effects is generally considered to be ‘challenging to measure’² but is ‘widely used throughout the air quality assessment profession to define a reasonable quantum of long-term pollution which is not likely to be discernible from fluctuations in background/measurements’. This is therefore used as a level at which ecological change ‘could’ occur and further assessment is required. It itself is not a threshold of harm. All pollution levels under dispute for this project are above or around this 1% level, as demonstrated by the applicant’s modelling. Natural England is not requiring consideration of impacts which in-combination are below this 1% threshold.
- Scientific evidence around impacts caused by nitrogen deposition and concentrations of ammonia and NO_x is evolving. Current levels where harm

¹ [Advice Note Ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects | National Infrastructure Planning \(planninginspectorate.gov.uk\)](https://www.planninginspectorate.gov.uk/advice-note-ten-habitats-regulations-assessment-relevant-to-nationally-significant-infrastructure-projects/)

² Para 5.5.1.6 of Holman et al (2020). A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.1, Institute of Air Quality Management, London - <https://iaqm.co.uk/text/guidance/air-quality-impacts-on-nature-sites-2020.pdf> (included in Appendix 3.3)

could occur are set through critical loads for nitrogen deposition³ and critical levels for ammonia⁴ and NOx.⁵ These are levels (or a range) of the pollutant below which adverse effects are unlikely to occur to the ecosystem. Such effects could be through growth stimulation effects to some species resulting in loss of diversity, eutrophic impacts resulting in dominance of nitrophilous species, or direct harm to plants through physiological or biochemical changes (impacts on photosynthesis, root:shoot ratio etc). Although there is evidently site- and species-specific variation in impacts, sites which exceed their relevant critical level or critical load are considered at risk of harm (with greater exceedance making that more likely or more severe). Absence of particular species at high pollutant levels therefore does not indicate that addition of further pollution will not further harm the integrity of the site. It is likely to indicate that historic high levels of pollution have already caused harm, and adding more will worsen this and make it very difficult to restore a site where it has a restore Conservation Objective which is the case for Epping Forest SAC. Where national or local measures are in place to reduce emissions, to bring down nitrogen loading at protected sites, adding more nitrogen will delay any recovery of the sites.

- It is acknowledged that the 'precautionary principle' does not mean that a project should be without risk before being acceptable. Similarly, uncertainty should not mean there is an automatic presumption against development. There is evidently uncertainty in ecological impacts that would arise at a given quantum of pollution. However, the consequences of the risk of adverse impact to a European Site are high, so a high bar applies before uncertainty can be used to justify that the risk is not 'plausible or real' but 'hypothetical'. This is given weight by the fact that the applicant's model indicates a 'perceptible' >1% would be generated by the project, the nitrogen critical load and ammonia critical level in the area are exceeded, and the conservation objectives of the protected sites are to 'restore' below critical levels and critical loads.
- As the air quality assessment is based on modelling, there will evidently be uncertainty in the results produced, and the extent to which the numbers can be relied on. To counter this uncertainty, substantial precaution is built into the model in terms of 'worst case' assumptions being made. It is therefore accepted that concentrations will likely be higher than in reality. However, it is not robust to discount the results due to this. Amendments to the model to 'tighten' assumptions, based on robust evidence (use of plume depletion calculations for example) may be acceptable within the detailed assessment to provide a less precautionary conclusion – but the applicant has not undertaken this.
- The Applicant claims their contribution is 'a minor change to a minor contributor on a tiny proportion of the site that has no sensitive species would be inconsequential to the coherence of the habitats and their constituent species'

³ Bobbink et al (2022) Review and revision of empirical critical loads of nitrogen for Europe <https://www.umweltbundesamt.de/en/publikationen/review-revision-of-empirical-critical-loads-of> (Included in Appendix 3.5)

⁴ Update of Chapter 3 following 2023 revision for ammonia - Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads and Levels and Air Pollution Effects, Risks and Trends – Part 3: Mapping critical levels for vegetation https://unece.org/sites/default/files/2023-08/Item%209%20c%20MappingManual_NH3-Chapter_3.2.3_revision_final.pdf (included in Appendix 3.6)

⁵ Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads and Levels and Air Pollution Effects, Risks and Trends – Part 3: Mapping critical levels for vegetation https://icpvegetation.ceh.ac.uk/sites/default/files/FinalnewChapter3v4Oct2017_000.pdf (included at Appendix 3.5)

- (Paragraph 2.2.6.c.v. of Examination Document REP6-118). This statement (presumably relating to the impact on Epping Forest SAC) does not reflect:
- that the proposed development will delay recovery of the site by 4 years (based on NO_x alone) – taking into account predicted improvements to vehicle emissions on a national level;
 - that Epping Forest SAC has a restore objective to reduce nitrogen deposition and ammonia concentration to below their critical load/level – it is currently exceeding both, and is likely to be exceeding the NO_x concentration critical level locally;
 - that the road network around the SAC is a large contributor to nitrogen deposition to the protected site – accounting for over 10% of the load across the entire 5km grid square including the relevant part of the SAC (plate C3 in REP6-118). As nitrogen from road sources is a local impact (impacting approx. 200m from the road) the impact at the relevant section of the SAC would be expected to arise almost entirely from the road in order for road traffic to generate >10% over all 5km;
 - that absence of nitrogen sensitive species does not mean addition of further nitrogen will not undermine the restore conservation objectives;
 - the area of the site that would be affected is qualifying SAC woodland – therefore an adverse effect to it could impact the integrity of the SAC.

Applicants' Post-event submissions, including written submission of oral comments for Issue Specific Hearing 9

3.46 Natural England has reviewed the Applicant's post event submissions for Issue Specific Hearing 9 (Environment and Biodiversity, Examination Document REP6-090) and have the following comments to make.

Ancient Woodland

3.47 We welcome the Applicant's commitment at 3.1.19 of REP6-090 that they will amend the oLEMP to refer to 'in perpetuity' rather than 'long term' management of compensation habitats and note this will be submitted at deadline 7.

3.48 As per our submission at REP6-152 following oral evidence at the Issue Specific Hearing 9, we support the removal of the term 'where practicable' in the oLEMP (Examination Document REP4-140 section 8.23) with regard to soils salvage and translocation. We suggested this be replaced with 'where ecologically feasible' and further detail given in line with oral evidence submitted by Dr Lascelles so that the extent of soils salvage that is ecologically possible is clarified. We welcome the Applicant's commitment to providing further detail on this at deadline 7.

The Wilderness

3.49 Please see Natural England's advice in Annex 5 of this letter in relation to the status of the woodland habitat at The Wilderness.

Shorne and Ashenbank Woods Site of Special Scientific Interest

3.50 Natural England notes in section C.2.2 of Examination Document REP6-090 that the Applicant intends to formally withdraw the proposed car park at Thong Lane at Deadline 7. Natural England will defer making further comments in relation to the proposed car park pending confirmation by the Applicant that the car park has been formally withdrawn from the application.

3.51 Natural England welcomes confirmation from the Applicant following ISH 9 in paragraph C.4.3 that the Applicant will include Figure 1.1 - Shorne and Ashenbank Woods SSSI Compensation Area in Annex C.9 of Natural England's Statement of Common Ground (Examination Document REP5-039) within the next iteration of the outline Landscape and Ecology Management Plan to be submitted at Deadline 7.

4 Annex 4: Natural England's comments on the Applicant's response to ExQ2

4.1 Natural England has reviewed the Applicant's responses to the second round of Examiner's Questions (Examination Documents REP6-106-114). Having reviewed these, we wish to make some further representations, and these are included below.

4.1 For ease, we have used the same table format as the questions shared originally.

5. Air Quality

PINS ID	Question to:	Question / Response
ExQ2_Q5.2.2	Applicant	<p>Reduction in the extent of nitrogen deposition sites: Kent Downs AONB</p> <p>The ExA remains unclear about the effects of the reduction in the extent of the land proposed to be acquired and managed to address the effects of nitrogen deposition on the Kent AONB. Please explain the assessment of the change for this designated area, specifically addressing the mitigation provided for effects of nitrogen deposition on habitat quality.</p>
	Applicant's response	<p>The proposed nitrogen deposition compensation is to compensate for significant effects of reduced habitat quality on ecologically designated sites and habitats, including those that lie within the Area of Outstanding Natural Beauty (AONB). The reduction in the area of compensation proposed at the Blue Bell Hill site would not prevent the achievement of the twin objectives for the compensation of additional connectivity within the ecological network and comparable area of compensation to significantly affected habitat overall. Therefore, the reduction of area would still achieve the objectives of compensating for the reduction in habitat quality within ecological sites and habitats within the AONB.</p> <p>The anticipated consequences of the reduction in the extent of nitrogen deposition sites on Kent Downs AONB, is set out in the Additional Submissions - 10.4 Change Application (August 2023) [CR1-002]. In summary, significant beneficial visual and landscape effects are reported in the Environmental Statement from the Blue Bell Hill site, but no significant effects from the Burham site.</p> <p>No new or different likely significant adverse effects are anticipated in relation to both sites during construction or operation due to the proposed reduction in the areas. There would still be a beneficial visual effect, though no longer considered significant, and the significant beneficial landscape effect would remain.</p>
	Natural England's comments on the Applicant's response	<p>Whilst Natural England notes the Applicant's response in which they consider that the removal of the compensation land at Blue Bell Hill and Burham from the Order limits does not compromise the scheme objectives, their removal appears to have implications for the landscape scale approach.</p> <p>The majority of the habitat and sites impacted by nitrogen deposition (excluding Habitats Sites covered by the Conservation of Habitats and Species Regulations) fall in Kent whilst the majority of the NDep compensation proposed, before the removal of these two sites, was north of the River. The removal of the land at Blue Bell</p>

		Hill and Burham further alters this balance and also removes the significant beneficial landscape effect for the Kent Downs AONB. We would therefore expect the Applicant to provide clarity on how the reduced habitat provision still meets the landscape scale approach both north and south of the Thames.
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6. Geology and Soils

PINS ID	Question to:	Question / Response
ExQ2_Q6.1.1	Applicant	<p>Ground water effects on designated sites</p> <p>The Ramsar Advanced Grouting Tunnel and Main Tunnels Numerical Model – Technical Report and Groundwater Methodology Report included in 9.89 Responses to the Examining Authority's ExQ1 Appendix G – 11. Biodiversity (Part 2 of 6) [REP4-195] provides the output from the model considering the flows for the main and grouting tunnels concluding that inflow rates are expected to be low, however the drawdown has the potential to affect land that is a reasonable distance to the east of the line of the tunnels (1,500m), albeit it is concluded that there is limited possibility of a significant direct effect.</p> <ul style="list-style-type: none"> • What difference would be likely if a perched water table is encountered? • What is the probability of saline water being encountered and drawn into the tunnelling area that requires to be dealt with? • Disposal of water drawn into the tunnelling area is suggested to be to watercourses that feed into the Medway Estuary and Marshes SPA and Ramsar Site area. <ul style="list-style-type: none"> – What is considered to be the effect of such a discharge on the designated site? – Are there circumstances in which other means of disposal would be required in order to avoid adverse effects on the designated site? – What monitoring measures are in place to address the disposal of water drawn into the tunnelling area? <p>Should monitoring show that the discharge of water is causing an adverse effect, can the Applicant confirm what alternative methods exist to dispose of the water and how these are secured?</p>
	Applicant's response	<p>The Applicant would like to clarify that the <i>Ramsar Advanced Grouting Tunnel and Main Tunnels Numerical Model – Technical Report and Groundwater Methodology Report</i> referenced within the first paragraph of the question formed the basis of initial consultation and technical engagement with Natural England and the Environment Agency. This has been superseded by ES Appendix 14.5 [APP-458] in which Annex J comprises the latest Ground Protection Tunnel and Main Tunnels Groundwater Model - Technical Note. It should be noted that no dewatering at the South Portal is proposed. The queried drawdown is superseded as a result of the movement of the proposed South Portal further south and no drawdown is expected to occur at a distance of 1,500m. Please refer to ES Appendix 14.5 [APP-458] in which Annex J Plate 3.3 shows the predicted small drawdown from the ground protection tunnel and Plate 3.5 of the same annex, shows the</p>

		<p>predicted small drawdown in the alluvium from the main tunnel. These show the modelled drawdown based on the DCO application design of the tunnels. Even conservative leakage rates into the tunnels, greater than would be allowed by the Lower Thames Crossing tunnelling specification, show similarly small drawdowns (ES Appendix 14.5 [APP-458] Annex J Plate 3.4 and Plate 3.6).</p> <p><i>'What difference would be likely if a perched water table is encountered?'</i></p> <p>In response, a perched water table is typically described as an accumulation of groundwater that is above the water table in the unsaturated zone. This would most often be where water is trapped above an impermeable layer. The three phases of ground investigation at the Ramsar have encountered shallow water in natural ground and continuously saturated soils and rock beneath. The low permeability silty clay alluvium acts to separate and confine the underlying gravel and chalk aquifers from the shallow water system of the Ramsar site. However, there is no evidence for perched water tables underlain by layers of unsaturated strata. It is important to note that the modelled drawdown from the DCO application design of the tunnels is small; in lateral extent and in magnitude as shown in ES Appendix 14.5 [APP-458] Annex J Plate 3.3 and Plate 3.5 (introduced in the above response). This is because of Project commitments that would reduce the need for groundwater dewatering during construction and would reduce seepage of groundwater into the tunnels during operation. These commitments are contained in ES Appendix 2.2: Code of Construction Practice, First Iteration of Environmental Management Plan [REP5-048] and comprise REAC references RDWE018a, RDWE020 and RDWE027. Therefore, even if there were perched water tables, no significant change to the modelled drawdowns would be expected. The assessment presented in ES Appendix 14.5 [APP-458] Annex J shows that the tunnelling work would result in groundwater drawdown effects that would be negligible or undetectable in the field.</p> <p><i>'What is the probability of saline water being encountered and drawn into the tunnelling area that requires to be dealt with?'</i></p> <p>The tunnelling method of the highway bored tunnels would comprise a closed faced method (secured through Project commitment RDWE059 of the updated ES Appendix 2.2: Code of Construction Practice [REP5-048]), which would reduce groundwater ingress into the tunnel face so that groundwater would not be drawn into the tunnelling area. The erection of a waterproof segmental concrete lining within the tunnel-boring machine (TBM) shield as part of the tunnelling process, for both the ground protection tunnel and the main tunnel, would ensure negligible leakage into the completed tunnel behind. In addition, please note that ES Appendix 14.5 [APP-458] Annex J presents the results of saline intrusion modelling from both during construction and during operation. The modelling shows the movement of the saline water interface would be negligible.</p> <p>Referring to the third set of questions, the ExA asks about '<i>disposal of water drawn into the tunnelling area (which) is suggested to be to watercourses that feed into the Medway Estuary and Marshes SPA and Ramsar Site Area</i>'.</p>
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		<p>In response to the question text relating to '<i>the Medway Estuary and Marshes SPA and Ramsar Site Area</i>', the responses below assume that reference should be made to the Thames Estuary and Marshes Ramsar site and South Thames Estuary and Marshes SSSI, both of which are south of the River Thames and in proximity to the proposed tunnelling.</p> <p>To clarify, the Applicant does not propose to dispose of water from the tunnelling works to watercourses that feed the Thames Estuary and Marshes Ramsar site and South Thames Estuary and Marshes SSSI.</p> <p>For the main tunnel, any water ingress from construction of the tunnel would be treated as part of the TBM slurry circuit as described in the Applicant's response to ExQ1_Q10.4.1 in Responses to the Examining Authority's ExQ1 Appx F: 10. Road Drainage, Water Environment & Flooding [REP4-193]. Treatment of the main tunnel TBM slurry would be at the North Portal and not south of the Thames.</p> <p>For the ground protection tunnel, if constructed, volumes of water entering the tunnel during construction would be small and mostly comprise water from the wet construction of the two shafts. No slurry would be created by tunnelling of the ground protection tunnel due to the type of TBM envisaged to be used. Water ingress into the ground protection tunnel would be very small (joint leakage only). Water from construction of the shafts or construction of the tunnel would be collected and conveyed to pit bottom for extraction and then disposed of by collection and removal offsite for disposal at a licensed treatment centre. In addition, the Contractor would agree the use of any chemical additives proposed for tunnelling with the Environment Agency in order to protect the water environment, prior to commencement of tunnelling. This is secured through RDWE019, which will be subject to an update at Deadline 7. Any water that collects from small leakages from the completed ground protection tunnel would be collected and removed by suitable means.</p> <p><i>'What is considered to be the effect of such a discharge on the designated site?'</i></p> <p>As stated above, the Applicant does not propose to dispose of water from the tunnelling works to watercourses that feed the Thames Estuary and Marshes Ramsar site and South Thames Estuary and Marshes SSSI.</p> <p><i>'Are there circumstances in which other means of disposal would be required in order to avoid adverse effects on the designated site?'</i></p> <p>As stated above, the Applicant does not propose to dispose of water from the tunnelling works to watercourses that feed the Thames Estuary and Marshes Ramsar site and South Thames Estuary and Marshes SSSI.</p> <p><i>'What monitoring measures are in place to address the disposal of water drawn into the tunnelling area?'</i></p> <p>As stated above, the Applicant does not propose to dispose of water from the tunnelling works to watercourses that feed the Thames Estuary and Marshes Ramsar site and South Thames Estuary and Marshes SSSI.</p>
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		<p>In response, and as stated above, significant volumes of water would not be drawn into the tunnelling area. Any water ingress from construction of the main tunnel would be treated north of the River Thames, as part of the TBM slurry circuit as described in the Applicant's response to ExQ1_Q10.4.1 [REP4-193]. All effluents would receive treatment prior to discharge into the Thames to ensure compliance with Environmental Permitting (REAC ref. RDWE023).</p> <p><i>'Should monitoring show that the discharge of water is causing an adverse effect, can the Applicant confirm what alternative methods exist to dispose of the water and how these are secured?'</i></p> <p>As stated above, the Applicant does not propose to dispose of water from the tunnelling works to watercourses that feed the Thames Estuary and Marshes Ramsar site and South Thames Estuary and Marshes SSSI and therefore no monitoring is proposed for the discharge of water from the tunnelling works south of the River Thames. Disposal of water from the tunnelling works would be discharged to the River Thames via the northern tunnel entrance compound. This would be subject to the conditions of an environmental permit (RDWE023 and RDWE028 [REP5-048]).</p>
	<p>Natural England's comments on the Applicant's response</p>	<p>Natural England welcomes confirmation from the Applicant that no water from the tunnelling works (including the ground protection tunnel) will be disposed of to, or within watercourses that run into, the South Thames Estuary and Marshes Site of Special Scientific Interest and the Thames Estuary and Marshes Ramsar site.</p>

11. Biodiversity

PINS ID	Question to:	Question / Response
ExQ2_Q11.1.1	Applicant, Natural England	<p>Species surveys limitations</p> <p>The Applicant’s response to ExQ1 Q11.2.1 suggests that the mitigation proposals are based upon a “precautionary” approach. In the example, the Water Vole receptor site for the translocation of the mammals will only be used if there is a sufficient number to warrant its use and maintain a viable population.</p> <ul style="list-style-type: none"> • Can the Applicant set out how mitigation will be achieved if numbers are not sufficient? • Is Natural England content that this alternative proposition can be accommodated within the construction phase without causing undue distress to the translocated population, particularly as there is a suggestion that it could involve multiple captures and releases? •
	Applicant’s response	<p>The Applicant’s mitigation proposals are designed to be proportionate to the likely significance of effect on ecological receptors reported in Environmental Statement Chapter 8: Terrestrial Biodiversity [APP-146], and follows the precautionary principle advocated in best practice guidance such as CIEEM 2018¹. This approach is important on projects such as the Lower Thames Crossing, where the consenting and construction phases cover many years and require the provision of pre-construction surveys (secured under Requirement 7 of the draft Development Consent Order [REP5-024]) to ensure detailed design and relevant protected species mitigation licences are based on up to date information.</p> <p>Regarding the translocation of water voles to an appropriate receptor site, it is important that the number of individuals moved to a site is sufficient to either form a viable population (minimum 50 individuals) or is close enough to an existing population to allow genetic exchange. Should the number of water voles trapped as part of the Project’s mitigation strategy meet this threshold, they would be released in a receptor site on the River Pant/Blackwater. If the number trapped does not reach that threshold, they would be released along the Mardyke where there are extant water vole populations. Due to the presence of the extant water vole population, if more than 50 animals were caught and required translocation then the carrying capacity on the Mardyke would be exceeded, which is why the offsite translocation site is the preferred receptor site.</p> <p>This methodology has been developed in discussion with Natural England and is detailed in Section 4.2.38 of The Water Vole Mitigation Licence method statement Version 3 (currently under review by Natural England – see Natural England’s Responses to comments on Written Representations [REP3-193],</p>

		paragraph 1.9.1). Once water voles have been translocated to a receptor site, these animals would not then undergo any further translocation.
	Natural England's comments on the Applicant's response	Natural England issued our letter of no impediment for water voles to the Applicant on the 10 November 2023. On the basis of the information and proposals provided in relation to water voles, Natural England sees no impediment to a licence being issued, should the Development Consent Order be granted. We will endeavour to ensure this is reflected in our next Statement of Common Ground.

PINS ID	Question to:	Question / Response
ExQ2_Q11.1.2	Applicant, Natural England, IPs with an interest in the natural	<p>Monitoring of success</p> <ul style="list-style-type: none"> • Do Natural England and other IPs agree that the proposals suggested in the Applicant's response to question Q11.5.2 provide a robust method of monitoring the success of species mitigation proposals? • Should aspects of the monitoring of the success of the proposed Green Bridges in relation to the use by the design species be undertaken alongside any monitoring required to meet Licence Applications? • In the document [REP4-182] the Applicant suggests that the oLEMP [REP3-106] refers to monitoring target habitats. Should the oLEMP be more specific in relation to species monitoring? • Over what time period should monitoring and subsequent mitigation and remedial action of different species, take place and are there natural, extreme weather events that justify extensions to the periods of assessment and replacement suggested? Can the Applicant set this information out in a table. • How could such be secured in the documentation?
	Applicant's response	The Applicant's proposed monitoring is set out in the relevant draft Natural England mitigation licences. This monitoring is detailed in Table 1 below and is based on construction commencing in 2024 – the start dates and years undertaken would be amended for the Natural England mitigation licences once the construction programme for the Project is confirmed; this is currently anticipated as 2026, following the ministerial statement earlier this year. These monitoring periods are secured within Environmental Statement Appendix 2.2: Code of Construction Practice [REP5-048] : Register of Environmental Actions and Commitments (REAC) Ref No TB015: ' <i>Monitoring of protected species during and post-construction would</i>

		<p><i>be in line with the requirements of the protected species mitigation licence.'</i></p> <p>The seasonal survey windows for protected species surveys are generally broad (e.g. bats – summer roosts are surveyed May to August, hibernation sites between November and March; great crested newts – six surveys between mid-March and 15 June; dormice – monthly between April to November; badger – can be undertaken year round; water vole – two surveys split between spring and early autumn). The long-term nature of the monitoring requirements (minimum of five years, maximum of 13 years – as indicated in Table G1.1 below) mean that 'one off' extreme weather events can be taken into account. They would not normally require additional survey work because if conditions are unsuitable at the time a survey is planned there is adequate scope to re-programme. If conditions are so extreme that no survey is possible this would be identified as a constraint at the time of submitting the licence return.</p>
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		Table 1 Species monitoring periods			
		Species	Construction/post construction	Monitoring undertaken	Years undertaken
		Badger	Construction	Ongoing monitoring programme	2025 – 2030
			Post construction	Ongoing monitoring programme within the construction areas and monitoring of the artificial badger setts and compensation mitigation areas	2025 – 2030
		Water vole	Construction	Ongoing monitoring programme to ensure adequate time to monitor Tilbury Main culvert	2026 – 2032
			Post construction	Ongoing monitoring programme	5yrs post construction
		Bats	Construction and post construction	Ongoing monitoring programme	2025, 2026, 2027, 2028, 2029, 2030, 2032, 2035
		Dormouse	Construction and post construction	Ongoing monitoring programme	2027 – 2037
		Great crested newt	Construction and post construction	Ongoing monitoring programme	2024 – 2037
	Natural England's comments on the Applicant's response	<p>As detailed in Natural England's response to ExQ2 Q11.1.2 (Examination Document REP6-1255), we consider that a more holistic monitoring approach is required to ensure that the mitigation and compensation is effective. This is broader than the requirements for the monitoring required as part of the protected species licences, and should extend to cover the wider suite of species present (including invertebrates, breeding birds, plants etc.).</p> <p>Our advice remains that the oLEMP should provide greater clarity on how the effectiveness of the ecological and landscape mitigation measures will be robustly monitored and remedial action taken as</p>			

		required.
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PINS ID	Question to:	Question / Response
ExQ2_Q11.1.3	Applicant	<p>Habitat creation, compensation and mitigation</p> <p>The ExA recognise that mitigation and compensation measures will take time to develop and be effective. Can the Applicant explain how the proposed programming of the mitigation/compensation and enhancement works has been taken into account and relied upon in the assessments?</p> <p>The Applicant is suggesting an approach to allow the detailed design phase flexibility. If the land-take currently highlighted as being necessary from designated sites and other habitats may be reduced at the detailed design stage, can the Applicant confirm that this would not result in mitigation as currently set out in the ES being reduced?</p>
	Applicant's response	<p>The Applicant has accounted for the delay in the creation and establishment of mitigation and compensation measures within the impact assessment as part of Environmental Statement (ES) Chapter 8: Terrestrial Biodiversity [APP-146]. In order to characterise the impact on an ecological receptor, a number of considerations are included: extent, magnitude, reversibility, timing, frequency and duration. This is in line with published best practice guidance for ecological impact assessment². The duration aspect of the characterisation allows for the consideration of mitigation or compensation provision, for example, the period for habitat establishment when considered against the timing of habitat loss and how any species might be affected by that establishment period.</p> <p>An example of this establishment duration consideration is shown in the assessment of likely significant effects during the construction phase of the Project on terrestrial invertebrates (see paragraph 8.6.301 of ES Chapter 8: Terrestrial Biodiversity [APP-146] for full details):</p> <p><i>'Loss of habitat due to construction works would take place in advance of habitat creation through mitigation measures, reducing the amount of available invertebrate habitat available for assemblages mentioned above on a temporary basis. This time lag would be further exacerbated by the newly created habitats taking time to mature, create habitat structure diversity and reach a similar quality to habitats lost. However, given the disturbed and ephemeral nature of open mosaic habitats, colonisation would be quick.</i></p> <p><i>Considering the proximity of created habitat to habitat lost and the speed at which new habitat can be colonised, the proposed habitat creation would compensate for the losses of terrestrial invertebrate habitats and reduce the residual impact on terrestrial invertebrates to a minor adverse level that would result in a slight adverse effect that is not significant in the medium to long term. A reversible temporary moderate</i></p>

adverse level of impact would persist on a short-term basis (approximately five years) between the time at which habitat clearance is undertaken and the establishment of the newly created habitats. This would result in a moderate adverse effect that is significant during that time.

A further example of this establishment duration consideration relates to the impact of habitat loss on dormice (see paragraph 8.6.160 [\[APP-146\]](#)):

'The Project design and mitigation measures further described in Section 8.5 would result in habitats of greater connectivity and quality for dormouse in the medium to long term (after approximately five to 10 years of the habitat being created), which would maintain the favourable conservation status of the dormouse populations. The initial level of impact of habitat loss on dormouse would become reversible temporary negligible adverse at the opening year of the Project given the habitat creation proposed, changing to permanent minor beneficial after approximately 10 years. Given the timescale between initial habitat loss and new habitat establishing, the effects of habitat loss on the dormouse population, which is of county importance, are considered to be slight adverse and not significant.'

The Applicant has secured a number of design commitments which propose measures to retain and protect as much vegetation as reasonably practicable:

Design Principles [\[REP4-146\]](#) Clause no LSP.01: *'All existing vegetation shall be retained as far as reasonably practicable in order to:*

- preserve its intrinsic ecological value*
- preserve the existing woodland character and pattern*
- preserve its function as a natural screen to the works*
- preserve the natural enclosed woodland settings for existing adjacent properties.'*

Minimum areas of retained woodland and hedges are shown in the Environmental Masterplan sections 1&1A, 2, 3, 4, 9, 10, 11, 12, 13 and 14 [\[REP4-124, REP3-098, REP2-018, APP-162, REP4-127, REP4-129, REP2-024, REP2-026, REP2-028 and REP2-031\]](#). However, even outside these areas, existing vegetation shall be retained as far as reasonably practicable. Measures for the protection of retained vegetation during site clearance works are provided for in the Register of Environmental Actions and Commitments (REAC) commitment LV028 which is secured via ES Appendix 2.2: Code of Construction Practice [\[REP5-048\]](#). Details relating to root protection for veteran or ancient trees are defined within the REAC commitment LV030.

Also secured in ES Appendix 2.2: Code of Construction Practice [\[REP5-048\]](#): REAC commitment LV001 ensures that: *'Detailed design for the Project, including diverted utilities, will aim to reduce the removal of trees and vegetation as far as reasonably practicable, and in accordance with the LEMP and the Environmental Masterplan (Figure 2.4, Application Document 6.2).'*

		<p>The Applicant does not propose to amend or revise any habitat creation secured as essential mitigation or compensation provision in its application following any changes made during the detailed design process, even where detailed design measures have resulted in a reduction in impacts on important habitats</p>
	<p>Natural England's comments on the Applicant's response</p>	<p>Natural England welcomes the confirmation from the Applicant that should, at the detailed design stage, the ecological impacts and land take required be reduced, the quantum of habitat creation will remain as detailed within the Environmental Statement and associated documents.</p> <p>We understand that, should there be a greater impact identified at the detailed design stage and further mitigation and/or compensation land be required, this will be subject to approval by the Secretary of State.</p>

PINS ID	Question to:	Question / Response																
ExQ2_Q11.2.5	Applicant	<p>Green bridges</p> <p>In the response at Deadline 4, Natural England [REP4-324] has provided the following table: The Design Principles also provide details of the minimum width of the green elements to be provided on each bridge which are as follows:</p> <table border="1" data-bbox="678 443 1827 1029"> <thead> <tr> <th data-bbox="678 443 981 480">Bridge</th> <th data-bbox="992 443 1827 480">Total width of green element</th> </tr> </thead> <tbody> <tr> <td data-bbox="678 488 981 547">Brewers Road (Clause S1.17)</td> <td data-bbox="992 488 1827 547">11.5 metres (10 metres planting zone to the east, 1.5 metres to the west)</td> </tr> <tr> <td data-bbox="678 555 981 614">Thong Lane South (Clause S2.12)</td> <td data-bbox="992 555 1827 614">21.5 metres (20 metres planting zone to the east, 1.5 metres to the west)</td> </tr> <tr> <td data-bbox="678 622 981 746">Thong Lane North (Clause S3.18)</td> <td data-bbox="992 622 1827 746">Unknown 'The planting green zones shall be maximised. Their width shall vary across the length of the bridge but shall have a 7m minimum width at pinch points. The WCH routes may be located within the planting zones'</td> </tr> <tr> <td data-bbox="678 754 981 813">Muckingford Road (Clause S10.10)</td> <td data-bbox="992 754 1827 813">14 metres (7 metres planting zone to the east, 7 metres to the west)</td> </tr> <tr> <td data-bbox="678 821 981 880">Hoford Road (Clause S10.11)</td> <td data-bbox="992 821 1827 880">6 metres (3 metres planting zone to the north, 7 metres to the south)</td> </tr> <tr> <td data-bbox="678 888 981 948">Green Lane (Clause S11.11)</td> <td data-bbox="992 888 1827 948">6 metres (3 metres planting zone to the east, 3 metres to the west)</td> </tr> <tr> <td data-bbox="678 956 981 1015">North Road (Clause S12.18)</td> <td data-bbox="992 956 1827 1015">14 metres (7 metres planting zone to the east, 7 metres to the west)</td> </tr> </tbody> </table> <p>Natural England also suggests that for mixed use bridges, their width should be determined by adding up the widths required to meet various needs. Within the 'DMRB CD 127 Cross-sections and headrooms' the standard verge width shown for rural all-purpose roads, alongside others, where noted, lies between 1.5 and 2.5 metres. This width can be augmented by the need for additional drainage provision etc. These are similar widths to the green elements to be provided on sections of the bridges.</p> <ul style="list-style-type: none"> • While it is accepted that roadside verges can be sanctuaries for wildflowers, pollinating insects, reptiles, amphibians and small mammals, can the Applicant confirm how the bridges are to satisfy the biodiversity outcomes expected, and not become utilised as verges? • Can the Applicant provide examples of similar arrangements for other schemes and 	Bridge	Total width of green element	Brewers Road (Clause S1.17)	11.5 metres (10 metres planting zone to the east, 1.5 metres to the west)	Thong Lane South (Clause S2.12)	21.5 metres (20 metres planting zone to the east, 1.5 metres to the west)	Thong Lane North (Clause S3.18)	Unknown 'The planting green zones shall be maximised. Their width shall vary across the length of the bridge but shall have a 7m minimum width at pinch points. The WCH routes may be located within the planting zones'	Muckingford Road (Clause S10.10)	14 metres (7 metres planting zone to the east, 7 metres to the west)	Hoford Road (Clause S10.11)	6 metres (3 metres planting zone to the north, 7 metres to the south)	Green Lane (Clause S11.11)	6 metres (3 metres planting zone to the east, 3 metres to the west)	North Road (Clause S12.18)	14 metres (7 metres planting zone to the east, 7 metres to the west)
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North Road (Clause S12.18)	14 metres (7 metres planting zone to the east, 7 metres to the west)																	

		<p>information regarding the success or failure of the design?</p> <ul style="list-style-type: none"> • What will be the Advisory Group’s role in scrutinising the potential contractors to ensure that they have the appropriate experience and where is this secured? • Should more clarity be contained in the oLEMP, with respect to the establishment and management of the green elements? <p>What changes would be required to the documentation and Order Limits in order to meet the current good practice recommendations suggested by Natural England [REP4-324]?</p>
	Applicant’s response	<p><i>‘While it is accepted that roadside verges can be sanctuaries for wildflowers, pollinating insects, reptiles, amphibians and small mammals, can the Applicant confirm how the bridges are to satisfy the biodiversity outcomes expected, and not become utilised as verges?’</i></p> <p>The Applicant confirms that the mitigation planting areas on all the Project’s green bridges are in addition to, and/or separate from, any highway standard ‘verges’ in locations where verge requirements are included within the green bridge designs. Separating these planting types within the design layout of the green bridges ensures that, where highway verges are required, the planting for mitigation cannot be attributed to or confused with highway verges.</p> <p>The term ‘verge’ merely defines an area of planting at the edge of a road or path, and so it could be argued the entirety of planting on the green bridge is in effect ‘verge habitat’. However, the main planting zones, as defined in the Design Principles [REP4-146], are set back from the carriageway, behind vehicle restraint systems to prevent vehicles directly impacting the area of mitigation planting. In addition to these planting zones on the green bridges, there are separate areas defined as verges which either support walkers, cyclists and horse riders (WCH) provision or provide narrow areas of roadside planting – typically grass. The purpose of the planting zones is to provide suitable safe, separate, crossing habitat for mobile species to use; to provide a biodiversity enhancement for the existing crossings to help integrate the bridges into the woodland and other habitats adjacent to the A122 Lower Thames Crossing which would be fragmented as a result of the Project; and to enhance user experience for WCH, as defined in the Design Principles [REP4-146] in clauses STR.08, S1.04, S1.17, S2.04, S2.12, S3.18, S10.01, S10.03, S10.10, S10.11, S11.11, S12.13, S12.16 and S12.18. User experience will be enhanced by having a separate crossing (generally separated by a hedgerow or line of planting), away from the traffic using the main road crossing. The management requirements for the areas of planting on the green bridges are secured via the outline Landscape and Ecology Management Plan [REP4-140] – Section 5.6 (Brewers Road, Thong Lane over the A2 [Thong Lane South] and Thong Lane over Lower Thames Crossing [Thong Lane North]), Section 6.7 (Muckingford Road, Hoford Road and Green Lane) and Section 7.6 (North Road) – where specific</p>

		<p>management practices have been identified for each of the green bridges and the different habitats they would support to ensure they meet the defined measures of success for the habitat types that they support. <i>'Can the Applicant provide examples of similar arrangements for other schemes and information regarding the success or failure of the design?'</i></p> <p>The Applicant outlined the green bridges currently either constructed or about to go into construction following grant of Development Consent Orders (DCOs) for National Highways projects in Deadline 4 Submission - 9.86 Post-event submissions, including written submission of oral comments, for ISH6 [REP4-182]; this is replicated below for ease of reference, with the addition of information regarding the HS1 green bridges that LTC green bridges at Thong Lane South and Brewers Road would connect to.</p> <p>Table 2 Examples of green bridges in the UK, focusing primarily on those provided for highway projects and including details of the two HS1 green bridges that would be linked to the proposed LTC green bridges</p>
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Scheme	Description	Reference / location
A21 Scotney Castle	Bridge is 92m long, 29m at its narrowest point and 55m at its widest. Constructed in 2005.	Near Lamberhurst village, Kent
HS1 Thong Lane Green Bridge	Bridge is 20m wide with approx. 13m of green planting.	South of Thong Lane
HS1 Brewers Road Green Bridge	Bridge is 50m wide with approx. 35m of green planting.	South of Brewers Road
Mile End Green Bridge	25m width of landscaped parkland.	Mile End, London
A566 Knutsford to Bowden Scheme	11m green bridge comprising a farm track and 7m green verge. Consent granted August 2014.	West of Mere, Cheshire
Weymouth Relief Road (x3 Lorton Lane bridge, Ridgeway bridge and South Down bridge)	Adapted road and farm access. Greened for enhancement <u>rather</u> than for specific habitat mitigation.	North of Weymouth, Dorset
A30 Chiverton to Carland Cross Scheme	Features planting and hedgerows designed to help badgers, voles and other creatures cross the road as well as a footpath and bridleway. Consent <u>granted</u> February 2020.	Over Marazanvose section of A30, Cornwall
A417 Missing Link	Three green bridges proposed as part of the scheme. Consent granted November 2022.	Between Brockworth bypass and Cowley roundabout in Gloucestershire
M25 junction 10/A3 Wisley interchange improvement	Cockcrow heathland bridge. Proposed heathland <u>green bridge</u> with WCH provision. Consent granted May 2022.	M25 junction 10, near Wisley , Surrey and A3 between Cobham/Byfleet and Ripley/Ockham
<p>The A566 Knutsford to Bowden Scheme's green bridge, which opened in 2017, comprises an '11m green bridge with a farm track and a 7m green verge'¹¹. The A417 Missing Link¹² (currently under construction) includes two multi-functional green bridges: Cowley Overbridge that supports a 3m wide grass verge with a native species rich hedgerow and Stockwell Overbridge that provides two 3m wide verges each with a native species rich hedgerow, as well as the more substantial 'landscape scale' Gloucestershire Way green bridge which includes a 25m wide area of calcareous grassland and two native species-rich hedgerows</p>		

		<p>three metres wide and at least 2m high (which is more akin to the 84m wide Thong Lane North green bridge over the Project). Also currently in construction is the A30 Chiverton to Carland Cross project which is delivering a '20m wide green bridge [to] serve as both habitat and crossing for a huge variety of species whilst also enabling greater connectivity and biodiversity across the area'¹³.</p> <p>Based on the precedent set by the recently consented projects above, the green bridge provision for the Project aligns with mitigation proposals for similar levels of habitat fragmentation that were identified for these highways projects.</p> <p>Of the seven projects with green bridges identified above, two are in pre-construction/early construction phases (M25 junction 10/A3 interchange and the A417 Missing Link) and one (the A30 Chiverton Cross to Carland Cross) is in the later stages of construction and is on target to be completed between mid-December 2023 and the end of March 2024, so no data is available yet on the success or otherwise of the green bridges.</p> <p>The A556 Knutsford to Bowden scheme, opened in 2017, had been designed to provide a safe crossing point for badgers and bats as well as accommodating a farm access track. Detailed post-opening evaluation for this structure is not yet available.</p> <p>The Weymouth relief road, which opened in January 2012 has three green bridges which provide landscape, recreational and biodiversity benefits including areas of chalk grassland.</p> <p>The A21 Scotney Castle green bridge is a well-documented example and one of the earliest green bridges to be constructed in the UK, opening in 2005 designed primarily for landscape and heritage benefits but also providing suitable habitat connectivity for protected species with surveys confirming use by dormice. The Mile End pedestrian green bridge in London opened in July 1999.</p> <p><i>'What will be the Advisory Group's role in scrutinising the potential contractors to ensure that they have the appropriate experience and where is this secured?'</i></p> <p>The terms of reference for the Advisory Group are defined in the outline Landscape and Ecology Management Plan (oLEMP) Appendix 1: LEMP Terms of Reference [APP-491]; this includes assurance of the LEMP and its implementation and ongoing decision making throughout the duration of the LEMP, as required. It does not provide scrutiny of potential Contractors, which is governed by the Applicant's tendering process which has been designed to ensure that appropriately qualified bidders are appointed. The Advisory Group membership would comprise the following senior executive representatives:</p> <ul style="list-style-type: none"> • Contractors • Owners of land that is subject to restriction via the LEMP • Local planning authorities
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		<ul style="list-style-type: none"> • The Applicant • Natural England • Other relevant groups <p>This will ensure that direct communication with Contractors is available to discuss any concerns regarding the implementation of the LEMP or to flag any issues and seek an appropriate resolution.</p> <p><i>‘Should more clarity be contained in the oLEMP, with respect to the establishment and management of the green elements?’</i></p> <p>The Applicant’s position is that the outline Landscape and Ecology Management Plan [REP4-140] provides sufficient detail regarding the required establishment periods in Table 4.1 and management requirements relating to the habitats types that are included within the planting zones for the green bridges. The outline management requirements are identified in Section 5.6 (Brewers Road, Thong Lane over the A2 [Thong Lane South] and Thong Lane over Lower Thames Crossing [Thong Lane North]), Section 6.7 (Muckingford Road, Hoford Road and Green Lane) and Section 7.6 (North Road). Section 8 describes the outline management prescriptions for habitat creation and/or management actions, timescales and measures of success for each of the proposed typologies contained within the management areas. It is the role of the LEMP to develop the detail. Requirement 5 of Schedule 2 of the DCO [REP5-024] sets out that the LEMP must be substantially in accordance with the oLEMP, include the details at requirement 5(2) and will be approved in writing by the Secretary of State prior to the opening of the relevant part.</p> <p><i>‘What changes would be required to the documentation and Order Limits in order to meet the current good practice recommendations suggested by Natural England [REP4-324]?’</i></p> <p>The Applicant does not agree with Natural England’s assertion, regarding green bridge proposals for planting zones ‘below the minimum 20 metres of habitat in one block meaning they are unlikely to function’. Evidence in the recently published Bat Mitigation Guidelines¹⁴ and IENE Handbook Wildlife & Traffic¹⁵ indicates that where specific landscape features are being replicated this is more important than the width of structure, whilst acknowledging that wider crossings have higher levels of usage than narrower ones for particular species. For European examples, where green bridges, also known as ‘overpasses’, are more common, the IENE Handbook Wildlife & Traffic has reviewed the suitability of different types of green bridge, which are appraised on a ‘species group’ status (see Table 7.4.3: Suitability of different types of wildlife passages for a selection of species or groups of species) and confirms that for bats and badgers multi-use overpasses are an optimum solution, and that multi-use overpasses can also be used with some adaptation to local conditions for dormice. In Table 7.4.4 – Recommended minimum dimensions for different types of wildlife passages. Ranges are based on guidelines which apply in different European countries derived from local monitoring. – Multi-use overpasses have the following recommended minimum</p>
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		<p>dimensions (based on case studies): width between 10–20m, with a width to length ratio of >0.6 – 0.8 where ‘width is the total width of the structure including earthen/vegetated strips. Earthen/vegetated strips both side of trails/small roads: 1–2m’. The minimum planting zone or vegetated strips for the Project’s green bridges are as follows: 1.5m where there is an offset with a significantly wider planting zone of 10m to 20m (Brewers Road and Thong Lane South green bridges respectively) but where symmetrical planting is proposed this ranges from a minimum of 3m each side of the track/footpath (Hoford Road and Green Lane) to 7m either side of a local road (Muckingford Road and North Road). As can be seen this is in line with the IENE recommendations for multi-use overpasses.</p> <p>The Applicant agrees that the A21 Scotney Castle bridge is an exemplar example; however, it was designed to meet very specific requirements which do not apply to the green bridge provision proposed for the Project and this has not been the approach taken for many recently consented highway projects where designs have sought to provide bespoke connectivity for specific species/habitats appropriate to the severance impact (e.g. re-provision of conditions that are being lost as a result of the project).</p> <p>Widening all except two of the Project’s green bridges that currently provide this level of planting, to accommodate a 20m planting zone, would introduce new impacts for highways design where bridges intersect with on/off slips, likely extension to construction timescales and duration of road closures, utility diversions (since many utilities cross the A122 via bridge structures or run parallel to the new road), as well as additional impact to landowners through additional permanent acquisition of land and/or potential widening of the Order Limits (e.g. Hoford Road green bridge, North Road green bridge) and potential additional impacts on designated habitats (Brewers Road green bridge) and other environmental impacts (e.g. landscape and visual and cultural heritage particularly, but also additional impacts on agricultural land).</p>
	<p>Natural England’s comments on the Applicant’s response</p>	<p>Natural England notes the clarity provided by the Applicant in relation to the differentiation between the ‘road verge’ and additional green bridge habitats and have no comments to make on this matter.</p> <p>Natural England notes the comparison of green bridge design across the strategic road network in England within Table 2 to the Applicant’s response to ExQ2 (Examination Document REP6-113). For all the green bridges, Natural England’s advice remains that their design should reflect, in full, the good practice guidance within the Natural England Green Bridges literature review (Examination Document REP4-329) and the Landscape Institute Green Bridges Technical Note (Examination Document REP4-330). This is detailed more fully in our advice following Issue Specific Hearing 6 (Examination Document REP4-324).</p> <p>Disappointingly, the Applicant has not detailed how the deviation from the good practice guidance will ensure that their ecological and landscape mitigation role will be effective in meeting the scheme objectives, as detailed within the Design Principles (Examination Document REP6-046).</p> <p>Natural England notes that the Applicant disputes the good practice guidance contained within the</p>

		<p>Landscape Institute’s Technical Note (Examination Document REP4-330) and Natural England’s commissioned literature review (Examination Document REP4-320), both of which the Applicant has confirmed the design of the green bridges will have regard to (Examination Documents REP6-047 and REP6-090).</p> <p>In response to this question, they state that ‘The Applicant does not agree with Natural England’s assertion, regarding green bridge proposals for planting zones ‘below the minimum 20 metres of habitat in one block meaning they are unlikely to function’; this approach is contrary to the good practice guidance.</p> <p>The Applicant states that Table 7.4.3 of the IENE guidance⁶ (included at Appendix 4.1 to this response) details that ‘multiuse overpasses’ are appropriate for bats. They Applicant also states these have a recommended <i>minimum</i> width of 10-20 metres and a width/length ratio of 0.6-0.8 with the width being ‘the total width of the structure including earthen/vegetates strips. Earthen vegetated strips both side[s] of trails/small roads 1-2m wide’.</p> <p>Given the length of the bridges crossing the Lower Thames Crossing, the width/length ratio does not appear to be met, given that the distance between habitats either side of the existing grey bridges across the A2 corridor are approximately 80metres (Thong Lane) and 100metres (Brewers Road).</p> <p>Notwithstanding the concern regarding the width of the bridges, during ISH 6 (Examination Document REP4-182), the Applicant confirmed in Paragraph 4.1.25 that ‘in relation to Brewers Road bridge, the target species are dormice and bats. For Thong Lane south, it is primarily dormice and bats also’. Using the IENE guidance that the Applicant refers to, it is recommended that the ‘optimal solution’ for the target dormouse species is a ‘landscape overpass’ or a ‘wildlife overpass’ (Table 7.4.3 or the IENE report). Neither of these structures are recommended to be multipurpose with local roads over them and they should have a minimum recommended width of 50-80 metres and 20-50 metres respectively and a width/length ratio of 0.5-0.8. The guidance does suggest that ‘multiuse overpasses’ can be used with some adaptation to local circumstances’ for dormice; however the Applicant has not detailed what such ‘adaptations’ are to meet the IENE good practice guidance.</p> <p>Notwithstanding these concerns, given the importance of the Brewers Road and Thong Lane South green bridges in mitigating impacts to the Kent Downs Area of Outstanding Natural Beauty, Natural England remains concerned that the design of the green bridges along the route are unlikely to be effective in achieving their landscape and ecological mitigation objectives.</p> <p>Natural England welcomes the inclusion of the green bridge installed by the Applicant at Scotney Castle over the A21, Lamberhurst bypass within their Table 2 comparison and their acknowledgement that this is an</p>
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⁶ Infrastructure & Ecology Network Europe (IENE) (2022). 7.4 Reducing barrier effect: wildlife passages – Handbook wildlife & traffic. <https://handbookwildlifetraffic.info/ch-7-solutions-to-reduce-transport-infrastructure-impacts-on-wildlife/7-4-reducing-barrier-effect-wildlife-passages>

		<p>example of good practice. The Applicant, in their response to this question, states that (our emphasis):</p> <p>‘The Applicant agrees that the A21 Scotney Castle bridge is an exemplar example; however, it was designed to meet very specific requirements which do not apply to the green bridge provision proposed for the Project and this has not been the approach taken for many recently consented highway projects where designs have sought to provide bespoke connectivity for specific species/habitats appropriate to the severance impact (e.g. re-provision of conditions that are being lost as a result of the project).’</p> <p>They also confirm that (our emphasis):</p> <p>‘The A21 Scotney Castle green bridge is a well-documented example and one of the earliest green bridges to be constructed in the UK, opening in 2005 designed primarily for landscape and heritage benefits but also providing suitable habitat connectivity for protected species with surveys confirming use by dormice.’</p> <p>Given the significant adverse residual landscape and visual impacts to the Kent Downs Area of Outstanding Natural Beauty (AONB) resulting from the Lower Thames Crossing, Natural England has long advocated that green bridges (which meet the Natural England and Landscape Institute Good Practice recommendations) should be provided at Thong Lane south and Brewers Road. Well designed, bridges meeting good practice (and aiming to be exemplary as with the A21 Scotney Castle bridge) would help to further mitigate the landscape and visual impacts and provide a high-quality experience for people recreating within the AONB.</p> <p>Indeed, the Design Principles (Examination Document REP6-046) for Clause S1.04 (Brewers Road and Thong Lane green bridge south) acknowledge the importance of the bridges for mitigating impacts to the AONB, with the bridges needing to be designed to meet the following criteria:</p> <ul style="list-style-type: none"> • ‘To act as local landmarks and to signal entry into the Kent Downs AONB for drivers... • To provide a bridge with soil depth suitable to establish appropriate shrubs and intermittent tree species, reflective of the surrounding character and species makeup of the Kent Downs AONB... • To provide a high-quality experience for users crossing the bridge through vegetation and woodland planting. The green bridge shall improve recreation access across the A2/M2/Lower Thames Crossing corridor’ <p>Given the significant similarities in the landscape objectives for the A21 Scotney Castle green bridge, which falls within the High Weald Area of Outstanding Natural Beauty, and the Applicant’s criteria detailed above, to ensure that impacts from the Lower Thames Crossing to the Kent Downs AONB are mitigated, Natural England would advise that the requirements for the Scotney Castle green bridge and those proposed within the Kent Downs AONB are directly comparable.</p>
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		<p>As such, we would expect a similarly exemplar approach to be applied to the Lower Thames Crossing to help mitigate both the landscape and ecological impacts of the project and deliver a ‘high quality experience for users crossing the bridge through vegetation and woodland planting’; exactly the same outcome that the Scotney Castle green bridge has achieved so successfully.</p> <p>Such delivery of high-quality green bridges across the A2 corridor would also be in accordance with Section 5.153 of the National Policy Statement for National Networks which states that:</p> <p>‘Where consent is given in these areas, the Secretary of State should be satisfied that the applicant has ensured that the project will be carried out to high environmental standards and where possible includes measures to enhance other aspects of the environment. Where necessary, the Secretary of State should consider the imposition of appropriate requirements to ensure these standards are delivered.’</p> <p>Natural England continues to advise that the design of the green bridges within the Kent Downs AONB should reflect the good practice guidance, referred to by the Applicant to ensure that they meet the scheme objectives for both landscape and ecological impacts resulting from the scheme.</p>
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PINS ID	Question to:	Question / Response
ExQ2_Q11.2.6	Applicant	<p>Green bridges</p> <p>The Applicant stated during the ISH6 Hearing that the green bridges' locations were selected where evidence of species crossing was noted during the surveys. Can the Applicant provide more detail on the background to this statement, and/or signpost the location(s) in the existing document set where this information is set out?</p>
	Applicant's response	<p>A summary of the requirement for green bridges is set out in Environmental Statement (ES) Chapter 8: Terrestrial Biodiversity, Section 8.5, paragraphs 8.5.8, sub paragraphs a-e [APP-146]. The Applicant provided this in a written response in its Post-event submission, including written submission of oral comments, for Issue Specific Hearing 6 (ISH6) [REP4-182], Item 4(a) purpose of green bridges and Annex B, Section B.3: Clarity on the purpose of the Green Bridges in this Project.</p> <p>In terms of specifics, the green bridges are intended to provide habitat linkages as well as reducing either new or existing habitat fragmentation effects. The rationale for the proposed mitigation in relation to habitat fragmentation is discussed in relation to both construction and/or operational impacts, as appropriate, in Section 8.6 of ES Chapter 8 [APP-146]. Primarily green bridges are proposed where the intention is to connect habitats in locations where they would otherwise be severed and/or to provide safe crossing points for species in locations which have been highlighted through the ecology surveys as providing important crossing locations for animals (e.g. bat flightlines, or where existing territories are severed, e.g. badger) or to facilitate improved connectivity between otherwise separated populations (e.g. dormice populations either side of the A2). More detail regarding the <i>primary</i> rationale for green bridge locations can be found below. The Applicant notes that the structures would potentially benefit other terrestrial species (e.g. reptiles, small mammals, amphibians, invertebrates, etc.), but that they have not been identified from surveys as the key driver for provision of green bridges at the chosen locations identified below.</p> <p>South of the river – green bridge provision:</p> <ul style="list-style-type: none"> • Brewers Road and Thong Lane south – both of these green bridges have been designed to connect the woodland to the north and south of the A2. Primarily, these green bridges have been designed to connect for dormouse, and to mitigate for the loss of any bat commuting routes over the A2 which might have been using the island of woodland planting between the two carriageways as a hop-over (see ES Chapter 8: Terrestrial Biodiversity [APP-146] paragraphs 8.6.159 and 8.6.166, paragraph 8.6.475, paragraphs 8.6.150 to 8.6.151, and paragraphs 8.6.469 and 8.6.474).

- Thong Lane north – this has been designed to connect the ancient woodland of Claylane Wood and Shorne and Ashenbank Woods Site of Special Scientific Interest (SSSI) (see ES Chapter 8: Terrestrial Biodiversity [APP-146] paragraph 8.6.9 and Table 8.29).

North of the river – green bridge provision:

Muckingford Road – this green bridge has primarily been designed to connect badger territories in this location. A number of latrines and a main sett were located in close proximity (see ES Figure 8.29: Badger Survey Results [APP-290]).

Hoford Road – this green bridge was primarily designed for use by commuting bats. This area had the second highest number of bat passes of any crossing point (of 21 crossing locations) (see Section E3.4 of ES Appendix 8.16: Draft EPS Mitigation Licence Application – Bats [APP-408]). In addition, a number of latrines and a main sett were located in close proximity, so this green bridge was designed to allow for connectivity for badgers (see ES Figure 8.29: Badger Survey Results [APP-290]).

Green Lane – this green bridge was primarily designed for use by commuting bats. This area had the sixth highest number of bat passes of any crossing point (of 21 crossing locations) (see Section E3.4 of ES Appendix 8.16: Draft EPS Mitigation Licence Application – Bats [APP-408]).

North Road – this green bridge was primarily designed for use by commuting bats. Although the recorded number of bat passes was relatively moderate (ninth highest of 21 crossing locations), it was noted that there are limited crossing locations at this point and connecting the Wilderness with habitat south of the Project would mitigate impacts on the wider bat population (see Section E3.4 of ES Appendix 8.16: Draft EPS Mitigation Licence Application – Bats [APP-408]).

To address concerns raised regarding the effectiveness of the connectivity for wildlife, specifically in relation to Thong Lane south and Brewers Road green bridges, the Applicant is proposing to include two new Design Principles, as detailed below, to further enhance connectivity for wildlife between habitat north and south of the A2 corridor:

S1.23	Brewers Road green bridge: Habitat connectivity	A mammal culvert shall be provided at the north side of the bridge, between the existing and new bridge abutments. The culvert shall be designed to allow mammal passage and adequate space for maintenance and inspection. The culvert structure shall be designed to integrate into the surrounding landscape.
S2.14	Thong Lane green bridge south: Habitat connectivity	A mammal culvert shall be provided southwest of the bridge, under the southern connector road. The culvert shall be designed to allow mammal passage and adequate space for maintenance and inspection. The culvert structure shall be designed to integrate into the surrounding landscape.

	Natural England's comments on the Applicant's response	Natural England notes the Applicant's recent commitment to provide mammal culverts for the Brewers Road and Thong Lane south green bridges in their response to ExQ2 Q11.2.6. No details of these appear to have been provided, nor an assessment of any additional ecological and/or landscape impacts in relation to the Kent Downs AONB that may result from them. Once this information has been provided, Natural England will be pleased to provide further advice to the Examining Authority.

PINS ID	Question to:	Question / Response
ExQ2_Q11.3.1	Applicant	<p>Post-consent surveys</p> <p>If it is accepted that the species surveys have been limited but provide a basis on which the worst-case scenario may be assessed, it must therefore be accepted that, as many IPs have suggested, revised surveys are required to validate previous surveys etc prior to detailed design and construction phases of the project.</p> <p>It is noted that within Document 6.3 ES Appx 2.2 - CoCP, First iteration of Environmental Management Plan v4.0 [REP5-049] there are a number of updates being specifically offered; however there appears to be no reference to species surveys.</p> <ul style="list-style-type: none"> • Can the Applicant confirm that all necessary protected species assessments are updated where appropriate prior to any site clearance or construction works commencing and identify where this commitment is secured in the control documents? • What risk exists that, when further surveys are undertaken, further mitigation works are required, and in which areas? Are there any potential risks to the need to increase the Order Limits? •
	Applicant's response	<p><i>'Can the Applicant confirm that all necessary protected species assessments are updated where appropriate prior to any site clearance or construction works commencing and identify where this commitment is secured in the control documents?'</i></p> <p>The Applicant confirms that the commitment to protected species surveys being undertaken prior to the start of construction is secured within the draft Development Consent Order (DCO) at Requirement 7 [REP5-024]. Pre-construction surveys will be undertaken to ensure robust baselines are available to support detailed design of protected species mitigation strategies, including licensable species. Surveys will be timed to provide updated baseline data from the season prior to the start of construction works which aligns with the standard requirements when applying for protected species licences.</p> <p><i>'What risk exists that, when further surveys are undertaken, further mitigation works are required, and in which areas? Are there any potential risks to the need to increase the Order Limits?'</i></p> <ul style="list-style-type: none"> • It is not anticipated that the Project Order Limits would require any subsequent change as a result of the updated baseline assessment or amendments (if necessary) to the current mitigation proposals. The Applicant considers that its assessment of likely significant effects on terrestrial biodiversity from the Project, and the associated mitigation strategy designed to avoid, reduce or compensate for any adverse effects (reported in Environmental Statement Chapter 8: Terrestrial Biodiversity [APP-146]), is sufficiently precautionary to address any changes in baseline following pre-construction surveys.

		<ul style="list-style-type: none"> • However, the Applicant recognises that, for any nationally significant infrastructure project, there will be a delay between consent and commencement of construction where baseline conditions may change, requiring amendments to mitigation proposals. Requirement 7 is the appropriate mechanism for dealing with this risk. Requirement 7 [REP5-024] provides that: <ul style="list-style-type: none"> – <i>‘(2) Following pre-construction survey work or at any time when carrying out the authorised development, where</i> <ul style="list-style-type: none"> – <i>(a) a protected species is shown to be present, or where there is a reasonable likelihood of it being present;</i> – <i>(b) application of the relevant assessment methods used in the environmental statement show that a significant effect is likely to occur which was not previously identified in the environmental statement; and</i> – <i>(c) that effect is not addressed by any prior approved scheme of protection and mitigation established in accordance with this paragraph,</i> – <i>the relevant parts of the relevant works must cease until a scheme of protection and mitigation measures has been submitted to and approved in writing by the Secretary of State.</i> – <i>(3) The undertaker must consult with Natural England and the relevant planning authority on the scheme referred to in sub-paragraph (2) prior to submission to the Secretary of State for approval, except where a suitably qualified and experienced ecologist, holding where relevant and appropriate a licence relating to the species in question, determines that the relevant works do not require a protected species licence.</i> <i>(4) The relevant works under sub-paragraph (2) must be carried out in accordance with the approved scheme, unless otherwise agreed by the Secretary of State after consultation with Natural England, and under any necessary licences.’</i>
	<p>Natural England’s comments on the Applicant’s response</p>	<p>The question and answer are focused upon pre-construction surveys for protected species, particularly those requiring a license (to avoid legal offences). Natural England advises that, in view of the age of survey data for the broader range of ecological receptors (such as invertebrates, breeding birds, and vascular plants etc.) at the point of Examination (approaching 5 years), and anticipating a two-year construction delay, and in view of the poor data resolution of the submitted survey data for the some groups (such as invertebrates) as discussed within Natural England written representations (Examination Document REP1-262, paragraph 7.1.9, 7.2.1, 7.2.11), we advise that it would be beneficial to broaden the</p>

		<p>scope of the pre-construction surveys to cover the suite of (or at least species or groups of elevated conservation concern) non-licensable species. This would allow for a more targeted approach to mitigation (including localised and / or strategic avoidance) and would appropriately account for changes that might well occur in the meantime (especially in areas of greater dynamism). We welcome assurances given elsewhere that the submitted scale of compensation / mitigation would not be reduced however, and that the submission represents a minimum offer.</p>
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PINS ID	Question to:	Question / Response
ExQ2_Q11.3.2	Applicant	<p>Offsetting</p> <p>The document reference 9.90 Mitigation Route Map [REP4-203] is noted, but the ExA would like to see a simple graphical representation / location plan to understand which area(s) of habitat are being created for particular impacts; such an approach will help provide clarity that the impacts are fully mitigated or compensated for. The detail provided in Tables 8.31 (south of the River Thames) and 8.35 (north of the River Thames) of Chapter 8 Terrestrial Biodiversity of the Environmental Statement [APP-146] are noted, but it continues to be difficult to track where the individual areas of habitat impacted are mitigated or compensated for on the ground within the submitted documents.</p>
	Applicant's response	<p>The Applicant has provided simple graphical representations which illustrate the location and extent of habitat creation proposals and the corresponding Project impacts for which they provide mitigation and compensation. These cover the following key habitat types:</p> <ul style="list-style-type: none"> • Woodland (excluding designated woodland loss and compensation which is reported in ES – Figure 8.33: Ancient Woodland Impacts [APP-294]) • Open mosaic habitat • Grassland (excluding amenity and poor semi-improved grassland of low biodiversity value) • Hedgerows <p>These figures are provided in the Figures Annex to this document. We are also working to produce a similar map showing wetland habitats which, due to the range of wetland habitats involved, will be submitted at Deadline 7.</p>
	Natural England's comments on the Applicant's response	<p><u>Woodland Habitat</u></p> <p>Natural England welcomes the inclusion of the woodland habitat plan; we recommend that this is updated following our advice in relation to 'The Wilderness' detailed in Annex 5 to this letter.</p> <p><u>Open Mosaic Habitat</u></p> <p>Natural England notes the habitat loss / mitigation map provided for open mosaic habitats set out in figure 2 of (Examination Document REP6-113). It is noted that there are significant areas of known extant open mosaic habitat in the vicinity of the Ashfields complex which are not shown on the maps (e.g. pages 5 and 6) and these appear as white space. The Applicant is requested to explain why these areas are not indicated on the plan, and therefore whether they are or are not included within the habitat loss:gain tables within the</p>

		Environmental Statement.
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PINS ID	Question to:	Question / Response
ExQ2_Q11.3.3	Applicant	<p>Biodiversity Net Gain (BNG)</p> <p>In a similar manner to ExQ2 Q11.3.2 of this set of questions, the ExA requests the Applicant provide a graphical representation / location plan in addition to that detailed above showing all areas of environmental improvement included in the BNG metric.</p>
	Applicant's response	<p>The Applicant's BNG Metric assessment [APP-417] includes all areas of <i>direct habitat loss and creation</i> within the Order Limits, with the following exceptions:</p> <ul style="list-style-type: none"> • Ancient woodland habitat lost (6.87ha) as a result of the Project is excluded from the baseline assessment. • Wood-pasture parkland habitat lost (0.07ha) as a result of the Project is excluded from the baseline assessment. • Bespoke compensation for ancient woodland loss (81ha) is excluded from the post-intervention assessment. • Nitrogen deposition compensation areas (246ha) are excluded from both the baseline and post-intervention parts of the assessment. <p>Areas of temporary land-take within the Order Limits are included in the BNG Metric assessment. For these areas, there is an assumption in the Metric assessment that the baseline habitat is lost and then re-instated post-construction to the same habitat type and condition as in the baseline.</p> <p>These explanatory notes support the Applicant's submission of graphical representations / location plans which the Applicant commits to issuing by Deadline 7, so that it is clear which features on the plans are included in the BNG Metric.</p>
	Natural England's comments on the Applicant's response	<p>Natural England agree with the exclusion of the above habitats from the metric. We will review the Applicant's submission of graphical representations / location plans when they are submitted.</p>

PINS ID	Question to:	Question / Response
ExQ2_Q11.3.4	Applicant, Natural England	<p>BNG</p> <p>The Applicant's response to Written Representations [REP2-046] states that it will require significant work to apply the classifications to update the BNG calculator. It is agreed that, although it is likely that a shift from version 3.1 to 4.0 will not require new field surveys, it may require additional desk-based work.</p> <p>The Applicant is asked to agree with Natural England the version of the BNG calculator that should be used.</p>
	Applicant's response	<p>Natural England, in their Deadline 5 submission [REP5-109], under Annex A Post-hearing submissions on Agenda Item 3: Mitigation, Compensation and Enhancement, state their position remains that, if a shift from Biodiversity Net Gain Metric v3.1 to v4.0 generates a disproportionate level of work, they will accept the ongoing use of v3.1.</p> <p>The Applicant set out its position on this change in its Post-event submissions, including written submission of oral comments, for Issue Specific Hearing 6 (ISH6) [REP4-182], Annex A.3 Response to Action Point 3: Biodiversity Net Gain. The conclusion of this consideration is that the Applicant does not consider re-running the calculations in Metric 4.0 to compare or supersede those presented within the Development Consent Order application in Metric 3.1 [APP-417] as a necessary or proportionate response to the release of Metric 4.0.</p> <p>Natural England still requests confirmation from the Applicant that it will rerun the figures through whatever metric is adopted (3.1 or 4.0) after detailed design. The Applicant confirms that the metric will be rerun after the detailed design stage, and that the version used for this rerun will be Metric v3.1 to enable comparison of figures for pre- and post-detailed design. This requirement would be secured via a new Register of Environmental Actions and Commitments (REAC) commitment in the Code of Construction Practice to be submitted at Deadline 6 [Document Reference 6.3 Appendix 2.2 (6)].</p>
	Natural England's comments on the Applicant's response	<p>We note the Applicant's confirmation that the metric will be rerun after the detailed design stage, that the version used for this rerun will be Metric v3.1, and that this requirement will be secured via a new REAC commitment in the Code of Construction Practice (Examination Document REP5-048) submitted at Deadline 6. We agree that the revised wording in the REAC (TB030, Examination Document REP6-038) captures this commitment and consider this a matter now agreed. The Statement of Common Ground between Natural England and the Applicant will be updated accordingly.</p>

PINS ID	Question to:	Question / Response
ExQ2_Q11.4.1	Applicant, Natural England, Kent Downs AONB Unit, Kent County	<p>Retention of construction compound as a car park: AONB considerations</p> <p>It is suggested that the intention is for part of the construction compound in this location (Work No. CA2) to be repurposed as a car park.</p> <ul style="list-style-type: none"> • Is an additional car park in this location necessary? • Should this facility be viewed as necessary, can its location be justified in AONB terms? <p>To the extent that additional visitors to this part of the AONB potentially could have negative implications from overuse on particular trees/paths, but additional parking provision may encourage additional visitor use and pressure;</p> <ul style="list-style-type: none"> • Can the Applicant signpost where the introduction of a new permanent car park is assessed within the submitted documentation and the AONB effects, if any, that are attributed to it? <p>Is further mitigation required to be provided, or can it be demonstrated that it is accommodated within existing proposals? How is this secured?</p>
	Applicant's response	<p>The Applicant has had detailed discussions with Kent County Council about the proposals in this area. The Applicant is aware of issues related to anti-social parking and has therefore sought to provide a potential solution over and above those required as mitigation for the Project. However, following the consideration of representations made by Interested Parties and the discussion at Issue Specific Hearing 9, the Applicant is exploring the removal of the car park and reconfiguration of this area of the project, further revised plans will be submitted at Deadline 7. The Applicant considers that such an amendment, if pursued, would not need to engage the change process in Advice Note Sixteen (<i>Requests to change applications after they have been accepted for examination</i>).</p> <p>The site is not located in the Area of Outstanding Natural Beauty (AONB). It is located to the west of Thong Lane and the AONB boundary runs along the eastern side of Thong Lane in this locality. Accordingly, the site lies within the setting of the AONB but not within the AONB itself. This is an important distinction on which to be clear at the outset as the relevant paragraph of the National Policy Statement for National Networks (NPSNN)¹⁶ against which the proposal should be considered is 5.154 rather than 5.152; the distinction being that, under 5.152, there is a strong presumption against projects in AONBs unless there</p>

	<p>are compelling reasons, or the benefits outweigh the impacts very significantly. Under 5.154 the duty is to 'have regard to the purposes of nationally designated areas' where the aim should be to 'avoid compromising the purposes of the designation'. The Applicant does not consider that any future car park use would compromise the purposes of the AONB designation in this locality.</p> <p>Schedule 1, Part 1 of draft Development Consent Order (DCO) [REP5-024] identifies Work No. CA2, as shown on Sheet 4 of the Works Plans [REP4-038], comprising the establishment of a construction compound for main works, located west of Thong Lane, of approximately 50,605 square metres.</p> <p>After use of the construction compound has ceased, Work No. 1P, as shown on Sheet 4 of the Works Plans [REP4-038], comprises the construction of a new car park next to the realigned Thong Lane which passes over the improved section of the A2 mainline (Work No. 1H).</p> <p>Clause S2.11 in the Design Principles [REP4-146] states:</p> <p><i>'A car park area shall be provided to the west of Thong Lane to provide recreational access to the PRoW network and open spaces within the wider area. The car park area shall repurpose hardstanding as a base for new surfacing and utility connections from the construction phase of the Project as far as reasonably practicable. Provision shall be made for facilities such as buildings (including a kiosk, toilets, changing and storage facility), and an area for cycle hire and cycle washing. The car park area shall also include provision for horsebox parking with suitable surfaced parking for 10-12 horseboxes, located away from the main car park circulation. A wooded buffer shall be provided along Thong Lane between the car park within the constraints of proposed utilities and highway visibility splays to the car park entrance. Planting shall be designed to the north of the car park to screen views from the village of Thong. Boundary planting shall be provided to integrate the car park into the surrounding landscape. Substations shall be appropriately sited and designed (materials and colour) to integrate with the car park and surrounding landscape.'</i></p> <p>Further information, including an assessment of the recreational effects of the proposed car park in terms of visitor numbers and associated effects on the surrounding area, is provided in Appendix A of the Environmental Statement (ES) Addendum [REP5-062]. A description of the proposals, the design evolution of the car park proposal and the benefits it would deliver are set out at paragraphs A.3.1 to A.3.6. An assessment of the impacts of the proposed car park and the increased use of the new walking, cycling and horse riding (WCH) routes it would facilitate is set out at Section A.4 (paragraphs A.4.2 to A.4.18).</p> <p>Paragraph A.5.1 summarises that no significant effects are considered likely to arise on the Shorne and Ashenbank Woods SSSI as a result of the creation of the new car park or additional WCH provision for the reasons set out at bullets (a) to (d) of that paragraph. The primary reason is that <i>'the number of net additional visitors to the area as a result of the new car park are considered to be very small. Visitors are primarily likely to be displaced from other nearby locations ... rather than new visitors to the area entirely.'</i></p> <p>The Applicant's response to ExQ1_Q13.1.8 presented in its Responses to the Examining Authority's ExQ1</p>
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		<p>Appendix I: 13 Social, Economic & Land-Use Considerations [REP4-201] further clarifies how the car park proposal might be brought forward by a third party in due course.</p> <p>Is an additional car park necessary?</p> <p>Provision of the car park in this location is not necessary to mitigate the impacts of the Project but is proposed as an opportunity to provide an enhancement to recreation facilities in the area, where there are understood to be existing congestion and capacity issues as set out below.</p> <p>Paragraph A.2.7 of Appendix A of the ES Addendum [REP5-062] notes that Shorne Woods Country Park is Kent County Council’s flagship Country Park. It contains existing built development in the form of the visitor centre and café and other ancillary built features.</p> <p>Paragraphs A.2.17 to A.2.19 of Appendix A of the ES Addendum [REP5-062] also note that to the west of Shorne and Ashenbank Woods SSSI is Jeskyns Community Woodland, which opened in 2007 and is approximately 149ha in size. The woodland is managed and maintained by Forestry England and includes woodlands, orchards, ponds, play areas and a café. It incorporates parking on-site (pay and display) for approximately 200 vehicles (including horse boxes). The Annual Survey of Visits to Visitor Attractions 2021 records a total of 878,626 visitors to Jeskyns in 2021, making it one of the most visited attractions in the region.</p> <p>Paragraph A.2.26 of Appendix A of the ES Addendum [REP5-062] notes that:</p> <p><i>‘Shorne and Ashenbank Woods form part of the northernmost extent of the Kent Downs Area of Outstanding Natural Beauty (AONB). The AONB Management Plan 2021-2026 notes that “over visiting’ has rapidly become an issue across the AONB particularly at countryside with heritage sites. Visitor site car parks are often full by mid-morning on a sunny weekend and the visitor experience at risk of declining, along with erosion to paths, damage to the historic, natural and cultural heritage as well as loss of tranquillity’. In response, the AONB is seeking to improve facilities that promote off season visiting, encourage sustainable tourism and promote new sites and visitor resources so reducing pressure on honey pot destinations (Kent Downs AONB Management Plan, 2021-2026).’</i></p> <p>The primary function of the new car park is to relieve congestion and capacity issues at the main Shorne Woods Country Park car park, with secondary benefits being that it may help to reduce some of the off-road parking which takes place along Park Pale and Brewers Road during peak periods as well as providing access to the wider countryside. Kent County Council have acknowledged in meetings with the Applicant that the existing footpath opposite the car park is already a well-used entrance to Shorne Woods Country Park. The car park will therefore provide an alternative parking option where visitors do not specifically intend to use the facilities provided at Shorne Woods Country Park, for example parking for horseboxes,</p>
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	<p>which is currently underprovided in the area. Users are likely to be dispersed across a wide area, including the new recreational routes to the west of Thong Lane, areas to the south of the car park (for example providing a route to Jeskyns Community Woodland) as well as to the western extent of Shorne Woods Country Park.</p> <p>Accordingly, the Applicant considers that the provision of a car park and associated facilities as described above meets a clearly identified need and would result in a positive legacy benefit from the Project.</p> <p>Kent County Council is supportive of the principle of the proposed car park as noted in its Statement of Common Ground with the Applicant (item 2.1.5) [REP1-103]. Further discussion regarding the facilities that would be provided at the car park are currently underway (item 2.1.6 of the Statement of Common Ground with Kent County Council submitted at Deadline 6 [Document Reference 5.4.4.7 (3)]).</p> <p>Can its location be justified in AONB terms?</p> <p>As noted in the introduction, the proposed car park is not located within the AONB. It is adjacent to the AONB. Planning Statement Appendix F: Kent Downs Area of Outstanding Natural Beauty [APP-501] describes how the Project accords with relevant policy on the protection of AONBs and how it has been designed to minimise impacts on the AONB as far as possible in the context of the need to deliver a safe and successful scheme which meets the Scheme Objectives. Where impacts arise, the Project includes measures to mitigate those impacts.</p> <p>Appendix F explains that, while the primary purpose of AONB designation is to conserve and enhance natural beauty of the landscape, account should be taken of the <i>'needs of agriculture, forestry and other rural industries and of the economic and social needs of local communities'</i> (paragraph F.4.25).</p> <p>Paragraph F.4.23(c) (which is an extract from the 1991 policy statement on AONBs¹⁷) notes that: <i>'c. Recreation is not an objective of designation, but the demand for recreation should be met so far as this is consistent with the conservation and natural beauty and the needs of agriculture, forestry and other uses.'</i></p> <p>As a resource which will result in positive recreational benefit for the users of the Country Park, the Applicant considers that the proposal can be justified in AONB policy terms in its location adjacent to the AONB.</p> <p>Where in the Application Documents is the introduction of a new permanent car park assessed and the effects on the AONB if any, that are attributed to it?</p> <p>Although not specifically referenced within ES Chapter 7: Landscape and Visual [APP-145], the potential effects of the car park have been considered as part of the Project as a whole, on the landscape character and visual amenity of the Kent Downs AONB in ES Appendix 7.9: Schedule of Landscape Effects [APP-384] and ES Appendix 7.10: Schedule of Visual Effects [APP-385].</p>
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	<p>The proposed car park adjacent to Shorne Woods Country Park lies just beyond the western boundary of the Kent Downs AONB, within the Higham Arable Farmland (sub area Thong) Local Landscape Character Area (LLCA) shown on ES Figure 7.2: Local Landscape Character Areas [APP-198]. Except for some potential glimpsed views from the Darnley Trail on the western edge of Shorne Woods Country Park, there would be no publicly accessible views of the proposed car park from within the Kent Downs AONB.</p> <p>No Representative Viewpoints encompassing the site of the proposed car park are identified on ES Figure 7.16: Visual Effects Drawing with Representative Viewpoint and Photomontage Locations [REP1-128]. This is because the proposed car park is typically screened from publicly accessible locations by existing woodland, except for glimpsed views through gaps in roadside vegetation along the adjoining Thong Lane. However, Thong Mead is identified as a residential receptor (VR-S02-R-024) on ES Figure 7.16, to the north-east of the proposed car park. A description of existing views from Thong Mead is provided in ES Appendix 7.7: Representative Viewpoint and Visual Receptor Baseline Descriptions and Visual Sensitivity [APP-382], with a visual impact assessment presented in ES Appendix 7.10: Schedule of Visual Effects.</p> <p>Views from Thong Mead residential property, south-west towards the car park, would be densely filtered by retained vegetation along the garden boundary with Thong Lane. During construction, a large adverse significance of visual effect has been assessed from Thong Mead, but this is principally due to the adjoining A2 compound and gas main diversion.</p> <p>In the opening year, a moderate adverse significance of visual effect has been assessed from Thong Mead before planting mitigation on the M2/A2/A122 Lower Thames Crossing junction embankment to the west and to the perimeter of the car park to the south-west has become established. However, by the design year, a slight beneficial significance of visual effect has been assessed due to the establishment of planting mitigation and removal of the existing pole-mounted overhead line in close-range westward views.</p> <p>For road users on Thong Lane, the removal of adjoining roadside vegetation to facilitate the A2 compound and works to Thong Lane would allow passing views of the proposed car park in year 1 of operation.</p> <p>However, by the design year, proposed woodland edge planting would have established, helping to integrate the car park into the landscape and substantially screen views of the car park from Thong Lane. Proposed hedgerow planting along the west side of Thong Lane to the south of the car park would also help screen views for road users approaching from the south, on the realigned section of Thong Lane on embankment and users of the Darnley Trail adjoining Thong Lane to the east.</p> <p>Based upon the above appraisal, the car park would not compromise the primary purpose of the AONB designation, which is to conserve and enhance the natural beauty of the landscape.</p> <p>The recreational impacts associated with the proposed car park are assessed in Appendix A of the ES Addendum [REP5-062]. This assesses the impacts in relation to the Shorne and Ashenbank Woods SSSI</p>
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		<p>specifically, noting that Shorne and Ashenbank Woods form part of the northernmost extent of the Kent Downs AONB. The assessment has been based on professional judgement and makes reasonable assumptions around usage based on current visitor numbers and behaviours at Shorne Woods Country Park. The assessment has considered a range of direct and indirect visitor impacts and concludes that there would be no significant effects on the Shorne and Ashenbank Woods SSSI as a result of the provision of new recreational facilities.</p> <p>As noted in the Applicant's response to ExQ1_Q13.1.8 presented in its Responses to the Examining Authority's ExQ1 Appendix I: 13. Social, Economic & Land-Use Considerations [REP4-201], the associated facilities at the car park would need to be subject to a planning application to the local planning authority. This would ensure any changes in impact upon the environment and AONB as a result of any associated facilities are considered should the authority or statutory consultees on any planning application deem that appropriate or necessary.</p> <p>Is further mitigation required, or can it be demonstrated that it is accommodated within existing proposals?</p> <p>The Applicant considers that the measures identified in clause S2.11 of the Design Principles [REP4-146] are sufficient, proportionate and appropriate to ensure the car park is appropriately designed and screened and minimises its impacts on the environment and on the AONB to an appropriate degree.</p> <p>How are the proposals secured?</p> <p>As noted above, the works are secured through Schedule 1, Part 1 of the draft DCO [REP5-024] as follows:</p> <ul style="list-style-type: none"> • Work No. 1P, as shown on Sheet 4 of the Works Plans [REP4-038], and being the construction of a new car park next to the realignment of Thong Lane over the improved section of the A2 mainline (Work No. 1H). • Design Principle commitments (clause S2.11) are secured through Requirements 3 and 5 of Part 1 of Schedule 2 of the draft DCO [REP5-024].
	<p>Natural England's comments on the Applicant's response</p>	<p>Natural England notes that the Applicant, in their written advice following Issue Specific Hearing 9 (Examination Document REP6-090), states that 'the Applicant is exploring the option to remove the car park provision at Thong Lane. The Applicant is proposing to introduce into the Examination a plan to show the impact of a revised layout at Deadline 7' (Paragraph C.2.2).</p> <p>Given this proposed amendment, Natural England will defer making any comments on the Applicant's response to ExQ2 Q11.4.1 pending the formal withdrawal of the car park from the Application at Deadline 7.</p>

PINS ID	Question to:	Question / Response
ExQ2_Q11.4.2	Applicant, Natural England, Kent	<p>Retention of construction compound as a car park: SSSI considerations</p> <p>With reference to the impact of the construction compound retention raised in Q11.4.1, there are potential impacts on the Shorne and Ashenbank Woods SSSI that also arise from this proposal. Natural England currently view these as underassessed.</p> <ul style="list-style-type: none"> • Is an additional car park in this location necessary? • Should this facility be viewed as necessary, can its location be justified in SSSI terms? • If there is a view that a permanent car park is to be created, the Applicant is requested to set out its latest view on the number of vehicles using the car park each day (moving on from the assessment in the ES of one trip each way per carparking space), to a breakdown of modes of access. <p>A statement of any mitigation measures necessary in respect of the SSSI designation should also be provided. Where would this be secured? Should this facility be viewed as necessary, can its location be justified in AONB terms?</p>
	Applicant's response	<p>Introduction and summary of Applicant's position</p> <p>The Applicant has had detailed discussions with Kent County Council about the proposals in this area. The Applicant is aware of issues related to anti-social parking and has therefore sought to provide a potential solution over and above those required as mitigation for the Project. However, following the consideration of representations made by Interested Parties and the discussion at Issue Specific Hearing 9, the Applicant is exploring the removal of the car park and reconfiguration of this area of the project, further revised plans will be submitted at Deadline 7. The Applicant considers that such an amendment, if pursued, would not need to engage the change process in Advice Note Sixteen (<i>Requests to change applications after they have been accepted for examination</i>).</p> <p>The site is not located in the Shorne and Ashenbank Woods Site of Special Scientific Interest (SSSI). It is located to the west of Thong Lane, and the SSSI boundary runs along the eastern side of Thong Lane in this locality.</p> <p>Schedule 1, Part 1 of the draft Development Consent Order (DCO) [REP5-024] identifies Work No. CA2, as shown on Sheet 4 of the Works Plans [REP4-038], comprising the establishment of a construction compound for main works, located west of Thong Lane, of approximately 50,605 square metres.</p> <p>After the use of the construction compound has ceased, Work No. 1P, as shown on Sheet 4 of the Works Plans [REP4-038], comprises the construction of a new car park next to the realigned Thong Lane over the</p>

		<p>improved section of the A2 mainline (Work No. 1H).</p> <p>Clause S2.11 in the Design Principles [REP4-146] states: <i>'A car park area shall be provided to the west of Thong Lane to provide recreational access to the PRoW network and open spaces within the wider area. The car park area shall repurpose hardstanding as a base for new surfacing and utility connections from the construction phase of the Project as far as reasonably practicable. Provision shall be made for facilities such as buildings (including a kiosk, toilets, changing and storage facility), and an area for cycle hire and cycle washing. The car park area shall also include provision for horsebox parking with suitable surfaced parking for 10-12 horseboxes, located away from the main car park circulation. A wooded buffer shall be provided along Thong Lane between the car park within the constraints of proposed utilities and highway visibility splays to the car park entrance. Planting shall be designed to the north of the car park to screen views from the village of Thong. Boundary planting shall be provided to integrate the car park into the surrounding landscape. Substations shall be appropriately sited and designed (materials and colour) to integrate with the car park and surrounding landscape.'</i></p> <p>Further information, including an assessment of the recreational effects of the proposed car park in terms of visitor numbers and associated effects on the surrounding area, is provided in Appendix A of the Environmental Statement (ES) Addendum [REP5-062]. A description of the proposals, the design evolution of the car park proposal and the benefits it would deliver are set out at paragraphs A.3.1 to A.3.6. An assessment of the impacts of the proposed car park and the increased use of the new walking, cycling and horse riding (WCH) routes it would facilitate is set out at Section A.4 (paragraphs A.4.2 to A.4.18).</p> <p>Paragraph A.5.1 summarises that no significant effects are considered likely to arise on the Shorne and Ashenbank Woods SSSI as a result of the creation of the new car park or additional WCH provision for the reasons set out at bullets (a) to (d) of that paragraph. The primary reason is that <i>'the number of net additional visitors to the area as a result of the new car park are considered to be very small. Visitors are primarily likely to be displaced from other nearby locations ... rather than new visitors to the area entirely.'</i></p> <p>The Applicant's response to ExQ1_Q13.1.8 presented in its Responses to the Examining Authority's ExQ1 Appendix I: 13 Social, Economic & Land-Use Considerations [REP4-201] provides further information. The Applicant does not consider that impacts on the SSSI as a result of the creation of the proposed car park at Thong Lane have been 'under-assessed'.</p> <p>Is an additional car park necessary?</p> <p>Provision of the car park in this location is not necessary to mitigate the impacts of the Project but is proposed as an opportunity to provide an enhancement to recreation facilities in the area, where there are understood to be existing congestion and capacity issues as set out below.</p> <p>Paragraph A.2.7 of Appendix A of the ES Addendum [REP5-062] notes that Shorne Woods Country Park is</p>
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	<p>Kent County Council's flagship Country Park. It contains existing built development in the form of the visitor centre and café and other ancillary built features.</p> <p>Paragraphs A.2.17 to A.2.19 of Appendix A of the ES Addendum [REP5-062] also note that to the west of Shorne and Ashenbank Woods SSSI is Jeskyns Community Woodland, which opened in 2007 and is approximately 149ha in size. The woodland is managed and maintained by Forestry England and includes woodlands, orchards, ponds, play areas and a café. It incorporates parking on-site (pay and display) for approximately 200 vehicles (including horse boxes). The Annual Survey of Visits to Visitor Attractions 2021 records a total of 878,626 visitors to Jeskyns in 2021, making it one of the most visited attractions in the region.</p> <p>Paragraph A.2.26 of Appendix A of the ES Addendum [REP5-062] notes that:</p> <p><i>'Shorne and Ashenbank Woods form part of the northernmost extent of the Kent Downs Area of Outstanding Natural Beauty (AONB). The AONB Management Plan 2021-2026 notes that "over visiting" has rapidly become an issue across the AONB particularly at countryside with heritage sites. Visitor site car parks are often full by mid-morning on a sunny weekend and the visitor experience at risk of declining, along with erosion to paths, damage to the historic, natural and cultural heritage as well as loss of tranquillity'. In response, the AONB is seeking to improve facilities that promote off season visiting, encourage sustainable tourism and promote new sites and visitor resources so reducing pressure on honey pot destinations (Kent Downs AONB Management Plan, 2021-2026).'</i></p> <p>The primary function of the new car park is to relieve congestion and capacity issues at the main Shorne Woods Country Park car park, with secondary benefits being that it may help to reduce some of the off-road parking which takes place along Park Pale and Brewers Road during peak periods, as well as providing access to the wider countryside. Kent County Council have acknowledged in meetings with the Applicant that the existing footpath opposite the car park is already a well-used entrance to Shorne Woods Country Park. The car park will therefore provide an alternative parking option where visitors do not specifically intend to use the facilities provided at Shorne Woods Country Park, for example parking for horseboxes, which is currently underprovided in the area. Users are likely to be dispersed across a wide area, including the new recreational routes to the west of Thong Lane, areas to the south of the car park (for example providing a route to Jeskyns Community Woodland) as well as to the western extent of Shorne Woods Country Park.</p> <p>Accordingly, the Applicant considers that the provision of a car park and associated facilities as described above meets a clearly identified need and would result in a positive legacy benefit from the Project.</p> <p>Kent County Council is supportive of the principle of the proposed car park as noted in its Statement of Common Ground with the Applicant (item 2.1.5) [REP1-103]. Further discussion regarding the facilities that would be provided at the car park are currently underway (item 2.1.6 of the Statement of Common Ground</p>
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	<p>with Kent County Council submitted at Deadline 6 [Document Reference 5.4.4.7 (3)]).</p> <p>Can its location be justified in SSSI terms?</p> <p>The recreational impacts associated with the proposed car park are assessed in Appendix A of the ES Addendum [REP5-062]. This assesses the impacts in relation to the Shorne and Ashenbank Woods SSSI specifically, noting that Shorne and Ashenbank Woods form part of the northernmost extent of the Kent Downs AONB. The assessment has been based on professional judgement and makes reasonable assumptions around usage based on current visitor numbers and behaviours at Shorne Woods Country Park. The assessment has considered a range of direct and indirect visitor impacts and concludes that there would be no significant effects on the Shorne and Ashenbank Woods SSSI as a result of the provision of new recreational facilities.</p> <p>As noted in the Applicant's response to ExQ1_Q13.1.8 presented in its Responses to the Examining Authority's ExQ1 Appendix I: 13. Social, Economic & Land-Use Considerations [REP4-201], the associated facilities at the car park would need to be subject to a planning application to the local planning authority. This would ensure any changes in impact upon the environment and AONB as a result of any associated facilities are considered should the authority or statutory consultees on any planning application deem that appropriate or necessary.</p> <p>The site of the proposed car park is adjacent to the SSSI and therefore paragraph 5.29 of the National Policy Statement for National Networks¹⁸ applies. As there would not be a significant impact upon the Shorne and Ashenbank Woods SSSI as a result of the new car park, it is considered to accord with this policy requirement.</p> <p>Vehicle use statistics and breakdown of modes of access</p> <p>Section A.4 of the ES Addendum [REP5-062] sets out two high-level occupancy scenarios for the car park providing a range of between 36,300 and 58,080 visitors per year. Since this document was produced, the Applicant has reviewed Natural England's subsequent submissions and further engaged with them to understand areas of concern. This has led to a revised assessment being produced, taking into account more detailed evidence-based assumptions from the Applicant's understanding of how the Shorne Woods Country Park car park is currently used. This includes incorporating assumptions relating to turnover of spaces within the car park (rather than assuming a single visit per car parking space per day) and providing a more detailed annual profile of visitor use (with lower occupancy rates for the car park during the winter months and higher occupancy rates during summer and shoulder season periods). This revised annual profile is set out below.</p>
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Table 3 Projected visitor numbers at Thong Lane car park

Criteria	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Spaces	100	100	100	100	100	100	100	100	100	100	100	100	
% occupancy	0.2	0.2	0.2	0.4	0.6	0.6	0.8	0.8	0.6	0.4	0.2	0.2	
Turnover per space	1	1	1	1	2	2	3	3	2	1	1	1	
No. vehicles	620	560	620	1200	3720	3600	7440	7440	3600	1240	600	620	
No. visitors	1240	1120	1240	2400	7440	7200	14880	14880	7200	2480	1200	1240	62,520

The table shows the annual number of visitors totalling **62,520 people**. This is slightly higher than the 58,080 people referenced in the high occupancy scenario set out in the ES Addendum [REP5-062]. However, it is not considered to be significantly different and the conclusions as set out in paragraph A.4.10 of the ES Addendum remain valid, i.e. that the increase is *'not considered to have a significant additional effect in the wider context of the local visitor environment, particularly as the visitors using the car park are likely to be dispersed across a wide area'*. This usage profile, which is rooted in evidence-based assumptions from the existing Shorne Woods Country Park (for example turnover of visitor spaces, length of stay) has been shared with Natural England.

Natural England has requested further detail relating to the split of users of the car park between walkers, cyclists and horse riders. User profile of the car park is anticipated to largely reflect that of the existing Shorne Woods Country Park car park, with the majority of users being walkers (including dog walkers), with the second highest proportion being cyclists, and the smallest proportion being horse riders.

An online questionnaire about the consultation draft Kent Country Parks Strategy 2023-2028¹⁹ asked respondents to identify which of the various service and facilities within the Country Parks they considered most important. Nearly half of respondents (48%) identified signposted walking routes and 28% identified easy access paths; some 13% of respondents identified cycle routes; and around 2% identified horse routes. There is clearly some unmet demand for cycling and horse riding, as evidenced by commentary in the consultation responses to the Strategy in relation to questions relating to additional services or facilities

		<p>needed (11% of respondents cited that they would like to see horse/cycle trails offered within the Country Parks).</p> <p>This need has also been highlighted in consultation with WCH groups as part of the development of the Project and is referenced in Project Design Report Part E: Design for Walkers, Cyclists and Horse Riders [APP-512], with proposed enhancements including the opportunity to provide links between key open areas and country parks surrounding the M2/A2/A122 Lower Thames Crossing junction and South Portal. An estimated split of users between walkers, cyclists and horse riders is anticipated to be 75%, 20% and 5% respectively. This is not considered to change the conclusions as set out in paragraph A.4.10 of the ES Addendum [REP5-062] as set out above.</p> <p>SSSI mitigation measures</p> <p>The Applicant considers that the measures identified in clause S2.11 of the Design Principles [REP4-146] are sufficient, proportionate and appropriate to ensure the car park is appropriately designed and screened and minimises its impacts on the environment and on the SSSI to an appropriate degree.</p> <p>How is this secured?</p> <p>As noted above, the works are secured through the Schedule 1, Part 1 of the draft DCO [REP5-024] as follows:</p> <ul style="list-style-type: none"> • Work No. 1P, as shown on Sheet 4 of the Works Plans [REP4-038], and being the construction of a new car park next to the realignment Thong Lane over the improved section of the A2 mainline (Work No. 1H). • Design Principle commitments (clause S2.11) are secured through Requirements 3 and 5 of Part 1 of Schedule 2 of the draft DCO [REP5-024].
	<p>Natural England's comments on the Applicant's response</p>	<p>Natural England notes that the Applicant, in their written advice following Issue Specific Hearing 9 (Examination Document REP6-090), states that 'the Applicant is exploring the option to remove the car park provision at Thong Lane. The Applicant is proposing to introduce into the Examination a plan to show the impact of a revised layout at Deadline 7' (Paragraph C.2.2).</p> <p>Given this proposed amendment, Natural England will defer making any comments on the Applicant's response to ExQ2 Q11.4.1 pending the formal withdrawal of the car park from the Application at Deadline 7.</p>

12. Physical effects of development and operation

PINS ID	Question to:	Question / Response
ExQ2_Q12.2.1	Applicant	<p>Landscape character: regrading of sensitivity and effects (sub area Cobham)</p> <p>The Applicant's response to ExQ1 Q12.2.6 states that "Since the Development Consent Order (DCO) application made in October 2020 was withdrawn, a thorough review of the landscape impact assessment in Environmental Statement (ES) Chapter 7: Landscape and Visual [APP-145] has been undertaken in conjunction with further refinement of the Project design... The assessment of high sensitivity for the West Kent Downs (sub area Cobham) Local Landscape Character Area (LLCA) has regard to the updated assessment of susceptibility to change set out in Table 1.3 of ES Appendix 7.9: Schedule of Landscape Effects [APP-384], which explains that '... due to the presence of the existing A2 corridor and HS1 along the northern boundary of this LLCA, the receptor has some ability to accommodate the Project without substantial loss of its overall integrity.' The ExA is unclear in respect of the reasoning behind this explanation for the regrading of sensitivity, noting that the A2 corridor and HS1 were adjacent to the northern boundary of this LLCA when the October 2020 application assigned the Cobham sub-area a 'very high' sensitivity. The Applicant's response does not provide a meaningful justification for the changes in definition of baseline conditions between the two submissions (2020 and 2022) when the landscape baseline has not changed in the intervening period. While visual baseline data may require updating to reflect modifications to the design (ref. GLVIA3), the Applicant does not explain the specific design changes that have resulted in changes to the visual baseline in this location. The ExA requires the reasons for the review and update of baseline conditions by the Applicant to be made clear.</p>
	Applicant's response	<p>Following withdrawal of the October 2020 Development Consent Order (DCO) application, a thorough review of the Environmental Statement (ES) as a whole was undertaken in conjunction with the revised Project design. This included the landscape impact assessment in ES Appendix 7.9: Schedule of Landscape Effects [APP-384].</p> <p>The reason for the change in the assessment of sensitivity since 2020 relates to the Applicant's post 2020 re-evaluation of the ability of the West Kent Downs (sub area Cobham) LLCA to accommodate the nature of the proposed change (susceptibility). It does not relate to a change in baseline. The Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3)³ state in paragraph 5.42 that:</p> <p><i>'... Since landscape effects in LVIA [Landscape and Visual Impact Assessment] are particular to both the specific landscape in question and the specific nature of the proposed development, the assessment of susceptibility must be tailored to the project. It should not be recorded as part of the baseline but should be considered as part of the assessment of effects.'</i></p>

To further explain the rationale for the Applicant's assessment of the sensitivity of the West Kent Downs (sub area Cobham) Local Landscape Character Area (LLCA) in ES Appendix 7.9: Schedule of Landscape Effects [APP-384], the main steps to the assessment taken by the Applicant are set out below:

- In accordance with GLVIA3, the assessment of landscape sensitivity has been derived by *'combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor'* (GLVIA3 Glossary definition).
- Table 7.3 of ES Chapter 7: Landscape and Visual [APP-145] sets out the landscape criteria (typical descriptors and examples) used to define landscape sensitivity. These are taken from Table 3.22 of Design Manual for Roads and Bridges (DMRB) LA 107 Landscape and Visual Effects⁴, which combines the assessment of landscape sensitivity (landscape value and susceptibility to change) into one set of criteria.
- Regarding landscape value, Area of Outstanding Natural Beauty designations are of national importance in planning policy terms.
- The typical descriptor for 'very high sensitivity' in Table 3.22 of LA 107 Landscape and Visual Effects is landscapes of *'very high international/national importance and rarity or value with no or very limited ability to accommodate change without substantial loss/gain'*.
- For the reasons outlined below, the West Kent Downs (sub area Cobham) LLCA is considered to have some ability to accommodate the Project without substantial loss of its overall integrity, which is consistent with the LA 107 descriptor for 'high sensitivity', that is, landscapes of *'high national importance containing distinctive features/elements with limited ability to accommodate change without incurring substantial loss/gain'*.

The Applicant has explained in its response to ExQ1 12.2.6 [REP4-200] that *'Retention of existing vegetation south of the HS1 corridor would ensure that an effective landscape buffer is maintained between the Project and the West Kent Downs (sub area Cobham) LLCA.'* For this reason, the Applicant considers there to be some ability of the sub-area Cobham LLCA *'to accommodate the Project without substantial loss of its overall integrity'*. The same conclusion was not drawn for the sensitivity of the West Kent Downs (sub area Shorne) LLCA because of the constrained nature of the existing M2/A2 corridor, including the central reservation woodland belt and enclosing woodland to the north and south, key landscape features that are considered respectively to have *'no or very limited ability to accommodate change without substantial loss/gain'*. In summary, the West Kent Downs (sub area Cobham) LLCA is considered to be less sensitive than the adjoining sub area Shorne LLCA due to its landscape context and the greater buffer from the Project afforded by retained woodland.

The LVIA submitted with the October 2020 DCO application represented a snapshot in time. Since withdrawal of the October 2020 DCO application, numerous design changes have been made. Some of these changes are only

		<p>minor but, considered together, have resulted in changes to the assessment. Design changes include changes to proposed utility works, which together with greater definition of the proposals has facilitated a reduction in the required working area along the M2/A2 corridor with a consequent reduction in the extent of assumed vegetation removal. The Applicant's response to Q12.3.2 provides further information on the reason for changes to the visual impact assessment since 2020.</p> <p>The Applicant's approach to the assessment of landscape sensitivity is consistent with the relevant good practice guidance in the overarching GLVIA3 and LA 107 Landscape and Visual Effects.</p> <p>The Applicant notes that were the sensitivity of the West Kent Downs (sub area Cobham) LLCA to have been assessed as 'very high' rather than the current assessment of 'high', it would not have changed the Applicant's 2022 assessment of a moderate adverse significance of effect during construction or a slight adverse significance of effect during operation, based on the significance matrix in Table 3.8.1 of Design Manual for Roads and Bridges LA 104 Environmental Assessment and Monitoring (LA 104)⁵. This is because the LA 104 significance matrix allows a choice of two significance categories when high or very high sensitivity are combined with a minor magnitude of effect. Of the two options in the matrix for receptors of both high and very high sensitivity, the Applicant considers a moderate adverse significance of effect during construction to be appropriate given the effects of the Project on this LLCA set out in ES Appendix 7.9: Schedule of Landscape Effects [APP-384]. At the opening year and design year, the LA 104 significance matrix only allows one significance category when high or very high sensitivity are combined with a negligible magnitude of effect and there would therefore be no difference in the Applicant's assessment of the overall significance of effect level if very high sensitivity was assessed rather than high sensitivity.</p>
	<p>Natural England's comments on the Applicant's response</p>	<p>Natural England notes the Applicant's regarding the difference in the Landscape and Visual Impact Assessment between the withdrawn 2020 submission and the current document subject to Examination. The Applicant states that:</p> <p style="padding-left: 40px;">'Since withdrawal of the October 2020 DCO application, numerous design changes have been made. Some of these changes are only minor but, considered together, have resulted in changes to the assessment. Design changes include changes to proposed utility works, which together with greater definition of the proposals has facilitated a reduction in the required working area along the M2/A2 corridor with a consequent reduction in the extent of assumed vegetation removal.'</p> <p>Without the changes between the two assessments being detailed fully, and how this has influenced the Applicant's Landscape and Visual Impact Assessment, Natural England consider the rationale behind the changes to the assessment of impacts remains unclear. Given this, we are not able to advise the Examining Authority on the appropriateness, or otherwise, of the approach taken.</p>

PINS ID	Question to:	Question / Response
ExQ2_Q12.3.1	Applicant	<p>Photomontages</p> <p>The ExA requests winter (year 1) and summer (year 15) photomontages of the A2/A122 junction as viewed from Thong Lane South Green Bridge. It is noted that the Applicant has previously provided two cross sections of this junction area [REP2-069] and [REP2-070] and Photomontage S22 taken from Henhurst Road Bridge; however, it was noted on the Accompanied Site Inspection that the maximum height of the LTC southbound to A2 westbound viaduct is approximately 17m above the existing ground level (in the vicinity of the former petrol filling station site), which seems quite significant. The visualisation of the impact of this would be aided by photomontages from Thong Lane South Bridge, which are a missing piece of the jigsaw in the visual impact assessment in this location.</p> <p>The photomontages should be submitted by D7 at the latest.</p>
	Applicant's response	<p>It would not be practicable to provide a photomontage from the proposed Thong Lane green bridge south. This is because the proposed green bridge is on a different alignment to that of the existing Thong Lane bridge over the A2 and it is not therefore practicable to obtain the existing baseline photography required for preparation of photomontage views. However, the Applicant will prepare two computer-generated images from the proposed shared pedestrian/ cycle route across the new green bridge, to provide illustrative views west towards the proposed M2/A2/A122 Lower Thames Crossing junction, including the A122 Lower Thames Crossing southbound to A2 westbound viaduct. Illustrative views will be prepared for the opening year (winter) and the design year (summer) 15 years after opening to allow for establishment of proposed planting mitigation.</p> <p>The Applicant will aim to provide the illustrative computer-generated images by Deadline 7.</p>
	Natural England's comments on the Applicant's response	<p>Natural England notes the Applicant's response to ExQ2 Q12.3.1 and their commitment to provide computer generated images by Deadline 7. We will provide our further advice once these are available.</p>

PINS ID	Question to:	Question / Response
ExQ2_Q12.3.2	Applicant	<p>Representative viewpoints: regrading of sensitivity and effects</p> <p>In response to ExQ1 Q12.3.2 regarding the downgrading of several representative viewpoints from the highest degree of sensitivity (Very High) with a knock-on downgrading of magnitude and significance of effect, the Applicant advises that the regrading is as a result of a “thorough review of the visual impact assessment in the ES, including a review of sensitivity and further refinement of the Project design.” The ExA notes, however, that no details are provided on what refinements to the Project design have contributed to the change in assessed impacts, either in the Applicant’s written response to ExQ1 Q12.3.2 or the associated ‘Comparison of visual impact assessments from 2020 and 2022’ table provided at Annex B of its response to ExQ1.</p> <p>The Kent Downs AONB Unit have also highlighted that, in respect of the regrading of the sensitivity, they note that the 2020 Assessment used the same criteria as that used in the 2022 version to define visual sensitivities (i.e.DMRB LA 107 Table 3.41). It is therefore still unclear to the ExA and IPs how the visual sensitivity and magnitude of effect has changed for many of the visual receptors in the intervening period.</p> <p>The ExA requires the reasons for the changed conditions from 2020 to 2022 to be made explicitly clear for each affected visual receptor included in Annex B.</p>
	Applicant’s response	<p>Following withdrawal of the October 2020 Development Consent Order (DCO) application, a thorough review for the Environmental Statement (ES) as a whole was undertaken in conjunction with the revised Project design. This included the visual impact assessment in ES Appendix 7.10: Schedule of Visual Effects [APP-385].</p> <p>The reasons for the changes to the visual impact assessment since withdrawal of the October 2020 DCO application are varied and relate to a re-evaluation of either visual sensitivity, magnitude of effect or significance of effect, or to a combination of two or more of these assessment steps. Further explanation of the re-evaluation undertaken for the current visual impact assessment presented in ES Appendix 7.10 is set out below.</p> <p>Visual sensitivity</p> <p>The Applicant confirms that the same criteria for the assessment of visual sensitivity were used for both the superseded 2020 ES submitted with the withdrawn DCO application and the current visual impact assessment in ES Appendix 7.10. However, the application of the sensitivity criteria has been reviewed and adjusted as explained below.</p> <p>The Applicant’s response to Gravesham Borough Council’s Local Impact Report [REP2-058] and Kent Downs Area of Outstanding Natural Beauty (AONB) Unit’s Written Representation [REP2-046] explained that a change from very high sensitivity to high sensitivity in ES Appendix 7.10 was ‘<i>due to the prominence of existing highway and/or rail infrastructure in the existing view, which reduces the sensitivity of visual receptors to the nature of the proposed</i></p>

		<p><i>change</i>.</p> <p>To further explain the Applicant's assessment of the sensitivity of visual receptors presented in ES Appendix 7.10, the main steps to the assessment are set out below, noting that the Guidelines for Landscape and Visual Impact Assessment, Third Edition⁶ (GLVIA3) state that the assessment of visual sensitivity should be derived by <i>'combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor'</i> (GLVIA3 Glossary definition):</p> <ul style="list-style-type: none"> • Table 7.4 of ES Chapter 7: Landscape and Visual [APP-145] sets out the visual criteria (typical descriptors and examples) used to define visual sensitivity. These are taken from Table 3.41 of Design Manual for Roads and Bridges (DMRB) LA 107 Landscape and Visual Effects⁷, which combines the assessment of visual sensitivity (value of the view and susceptibility of the viewer to change) into one set of criteria. <p>In addition to the typical descriptors in LA 107 Landscape and Visual Effects, the Applicant also notes that paragraph 3.4.1 of LA 107 Landscape and Visual Effects states that <i>'the assessment of susceptibility to change should be tailored to the project'</i> and provides the following example:</p> <ul style="list-style-type: none"> • <i>'... A possible example could be where receptors with prominent views towards the highway infrastructure are more likely to have a low susceptibility to change of a project, than receptors with no existing views towards the highway infrastructure which are more likely to have a high susceptibility to change.'</i> • Table 3.41 of LA 107 Landscape and Visual Effects assigns 'very high sensitivity' to <i>'Views from and of very important national/international landscapes, cultural/historical sites (e.g. National Parks, UNESCO World Heritage sites).'</i> This was used as a desk-based starting point for the assessment of visual sensitivity. • AONB designations are of national importance in planning policy terms, however, the actual nature of existing views was also considered in the assessment. From Representative Viewpoints where existing views are already affected by the A2 corridor, the assessment of sensitivity is considered to be high rather than very high, due to the reduced quality of the existing view and therefore the reduced sensitivity of viewers to change. This remains consistent with the typical descriptor in Table 3.41 of LA 107 Landscape and Visual Effects, which assigns high sensitivity to <i>'Views from and of rare designated landscapes of national importance'</i>. <p>Magnitude of Effect</p> <p>In addition, several Project design changes have been made since withdrawal of the October 2020 DCO application. Some of these changes are only minor but considered together have resulted in changes to the assessment. Design changes include numerous modifications to proposed utility works, which together with greater definition of the Project proposals has facilitated a reduction in the required working area along the M2/A2</p>
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	<p>corridor with a consequent reduction in the extent of assumed vegetation removal. A full re-evaluation of the assessment of magnitude of visual effect since withdrawal of the October 2020 DCO application has therefore been undertaken. Reasons for the differences in magnitude of effect levels are set out in Annex A of this Appendix and relate to:</p> <ul style="list-style-type: none"> • Changes to Project design • Greater definition of Project proposals enabling a slightly less precautionary approach to assessment, while at the same timing assuming a realistic worst case • General re-evaluation of the 2020 ES assessment in accordance with the typical descriptors for magnitude of effect set out in Table 3.43 of LA 107 Landscape and Visual Effects. <p>Significance of Effect</p> <p>Changes to the assessment of sensitivity and magnitude of effect since withdrawal of the October 2020 DCO application were then combined to determine the resulting significance of effect. The Significance Matrix in Table 3.8.1 of DMRB LA 104 Environmental Assessment and Monitoring⁸ gives two significance category options for some combinations of sensitivity and magnitude of impact (effect). In such instances, paragraph 3.8.1 of LA 104 requires one of the two options to be selected and evidence to be provided ‘to support the reporting of a single significance category’.</p> <p>As stated in paragraph 4.5.1 of ES Appendix 7.2: Landscape and Visual Assessment Methodology [APP-377], ‘Professional judgement has been applied to determine the appropriate significance of effect where the significance could be one of two options in the matrix [Significance Matrix in Table 3.8.1 of LA 104]. Justification for the reporting of a single significance category is provided in the assessment commentary in Appendix 7.10: Schedule of Visual Effects.’ This evidence was added to the commentaries in ES Appendix 7.10 [APP-385] since withdrawal of the October 2020 DCO application and in some instances, the review process has resulted in the reporting of a different significance of effect level in the current visual impact assessment. Where applicable, this type of change has been noted in Annex A.</p> <p>Summary of Changes Since Withdrawal of October 2020 DCO Application</p> <p>Several changes have been made to either the sensitivity of visual receptors, the magnitude of effect or the significance of effect in ES Appendix 7.10, since withdrawal of the October 2020 DCO application. The reasons for these changes are set out in tabular format in Annex A.</p> <p>For some Representative Viewpoints, reduced significance levels have been reported in some assessment periods but effects are still considered to be significant, for example, from Representative Viewpoint S-04, a view from the Kent Downs AONB on Park Pale, part of the National Cycle Network Route 177 and Darnley Trail recreational route.</p> <p>From other Representative Viewpoints, a visual effect considered to be significant in the 2020 version of ES</p>
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	<p>Appendix 7.10 is no longer considered to be significant in the 2022 version, for example, in the design year from Representative Viewpoint S-08, a view from the Kent Downs AONB on footpath NS179, within Cobham Hall Grade II* Registered Park and Garden.</p> <p>In other examples, such as from Representative Viewpoint S-11, a view from the Kent Downs AONB on footpath NS179 within Cobham Hall Grade II* Registered Park and Garden, increased significance levels have been reported, with new significant effects identified.</p> <p>For several Representative Viewpoints, there have either been no changes to significance levels or no significant effects have been reported in either the 2020 or 2022 versions of ES Appendix 7.10 despite changes to either sensitivity or magnitude, for example, Representative Viewpoint S-31, a view from footpath NG8 located within Southern Valley Golf Club at the urban edge of Gravesend.</p> <p>Corrections</p> <p>Visual Sensitivity – Tilbury and Coalhouse Forts</p> <p>In the Applicant’s response to Gravesham Borough Council’s Local Impact Report [REP2-058] and Kent Downs AONB Unit’s Written Representation [REP2-046], the reasoning provided for the change in sensitivity from very high to high at Tilbury Fort (Representative Viewpoint N-01) and Coalhouse Fort (Representative Viewpoint N-05) was given as being, ‘<i>High sensitivity takes account of the cultural/historic significance of the site. It is not considered to be a ‘very important national/ international...cultural/historic site’ that would align with very high sensitivity under LA 107 Landscape and Visual Effects</i>’. On further investigation, the Applicant no longer considers this to be correct and that receptors at both Representative Viewpoints would be of very high sensitivity in accordance with the descriptor stated in Table 3.41 of LA 107 Landscape and Visual Effects, ‘<i>Views from and of very important national/international landscapes, cultural/historical sites (e.g. National Parks, UNESCO World Heritage sites)</i>.’ This is due to the forts being very important cultural/historic sites. The change in visual impact assessment as a result of this change in sensitivity, is presented below. Representative Viewpoints N-01 and N-05 have not been considered further in Annex A.</p> <p>Significance of Effect at Tilbury Fort (With Increased Sensitivity) (Representative Viewpoint N-01)</p> <p>During construction, for very high sensitivity receptors at Tilbury Fort, the significance matrix in Table 3.8.1 LA 104 Environmental Assessment and Monitoring allows a choice of two significance categories when very high sensitivity is combined with a minor magnitude of effect (the 2022 magnitude of effect assessment). Of the two options in the matrix, this review has concluded that a moderate adverse significance of effect would be more appropriate than a large adverse significance of effect due to construction works being viewed in the context of existing industrial buildings north of the River Thames. The 2022 Landscape and Visual Impact Assessment (LVIA) in ES Appendix 7.10 assessed a slight adverse significance of effect at Tilbury Fort during construction, therefore, an additional significant effect has now been identified during construction of the Project.</p>
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		<p>During operation, for very high sensitivity receptors at Tilbury Fort, the significance matrix allows one significance category when very high sensitivity is combined with a negligible magnitude of effect (the 2022 magnitude of effect assessments at opening year and design year). This review has concluded that a slight adverse significance of effect (as stated in LA 104) is appropriate, as the sculptural landscape mounding at Tilbury Fields would be visible from Tilbury Fort, albeit in the context of Tilbury Sewage Treatment Works and existing OHL. There would therefore be no change in the significance of effect levels presented in the 2022 LVIA at opening year and design year.</p> <p>Significance of Effect at Coalhouse Fort (With Increased Sensitivity) (Representative Viewpoint N-05)</p> <p>During construction, for very high sensitivity receptors at Coalhouse Fort, the significance matrix allows a choice of two significance categories when very high sensitivity is combined with a moderate magnitude of effect (the 2022 magnitude of effect assessment). Of the two options in the matrix, this review has concluded that a large adverse significance of effect would be more appropriate than a very large adverse significance of effect due to the screening provided by intervening vegetation. The 2022 LVIA assessed a moderate adverse significance of effect at Coalhouse Fort during construction, therefore, effects during construction of the Project are still considered to be significant.</p> <p>During operation, for very high sensitivity receptors at Coalhouse Fort, the significance matrix allows one significance category when very high sensitivity is combined with a negligible magnitude of effect. This review has concluded that a slight adverse significance of effect (as stated in LA 104) is appropriate, due to the screening provided by sculptural landscape mounding at Tilbury Fields. There would therefore be no change in the significance of effect levels presented in the 2022 LVIA at opening year and design year.</p>
	<p>Natural England's comments on the Applicant's response</p>	<p>Having reviewed Table A.1 Reasons for change between visual impact assessment from 2020 and 2022 within Annex A (Reasons for change between visual impact assessment from 2020 and 2022) to the Applicant's response to ExQ2 Q12.3.2 (Examination Document REP6-115), we remain concerned regarding the change in conclusions reached between the two assessments.</p> <p>For Viewpoint S-05, Park Pale bridge within the Kent Downs AONB, the impact detailed in Table A.1, comparing the two assessments at opening year winter changed from 'Very large adverse' in 2020 to 'large adverse' in 2022. The justification provided by the Applicant for this change is:</p> <p>Opening year winter The significance matrix allows a choice of two significance categories when high sensitivity is combined with a major magnitude of effect (the 2022 sensitivity and magnitude of effect assessments). Of the two options in the matrix, the review for the 2022 LVIA concluded that a large adverse significance of effect would be more appropriate than a very large adverse significance of effect due to the extent of Project change being viewed</p>

		<p>in the context of the existing A2 corridor.’</p> <p>Similarly, for S-05a, Park Pale overbridge, the impact within the Design year summer assessment in the 2020 submission was considered ‘very large adverse’ which has been reduced to ‘moderate adverse’ in the 2022 documentation. The justification provided for this change is:</p> <p>‘Design year summer The significance matrix allows a choice of two significance categories when high sensitivity is combined with a moderate magnitude of effect (the 2022 sensitivity and magnitude of effect assessments). Of the two options in the matrix, the review for the 2022 LVIA concluded that a moderate adverse significance of effect would be more appropriate than a large adverse significance of effect due to the extent of project change being viewed in the context of the existing A2 corridor and due to the effect of established mitigation planting.’</p> <p>Table A.1 details other similar changes to impacts within the AONB and its setting. Given the existing A2 corridor has remained largely unchanged between the 2020 and 2022 assessments and the limited refinements to the project itself, Natural England remains concerned regarding the changes to the assessment. We would support the Applicant providing greater clarity and evidence to support the apparent difference in approach, particularly in relation to why there was a change in the existing perception of the A2 corridor between the two submissions. Such information, explaining the difference more clearly, would help Natural England provide detailed advice in relation to this matter to the Examining Authority.</p>
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5 Annex 5: Natural England's advice in relation to the status of woodland at 'The Wilderness'

- 5.1 Natural England's Ancient Woodland Inventory Unit has confirmed that on the basis of the evidence submitted on 23/08/2023, the southern section of the Wilderness, equal to 0.44ha, is considered to be ancient semi natural woodland (ASNW).
- 5.2 The Unit's conclusion is therefore that the wilderness should be split up into two sections:
1. The southern section will be known as 'The Wilderness' which has shown consistent woodland coverage since pre 1760s.
 2. The remaining section 'The Wilderness (Groves)', which was shown as part open grassland, part scattered trees and part plantation in 1760s and shows as a dense woodland from 1839 onwards.
- 5.3 The northern section (Groves) has shown presence of plantation and gardens grounds in 1767, and then shows as an established woodland (separate to the wilderness) from 1839.
- 5.4 The southern section is classed as ancient semi-natural woodland; the northern section is classed as long-established woodland.
- 5.5 The polygon will be split and the Wilderness added to the pending Ancient Woodland Update layer. We have included a plan showing the area of ancient woodland below.
- 5.6 Natural England does not endorse the loss of and damage to ancient woodlands, which are afforded significant protection in planning policy in both the National Planning Policy Framework (Paragraph 180(c) and the National Policy Statement for National Networks (Paragraph 5.32):

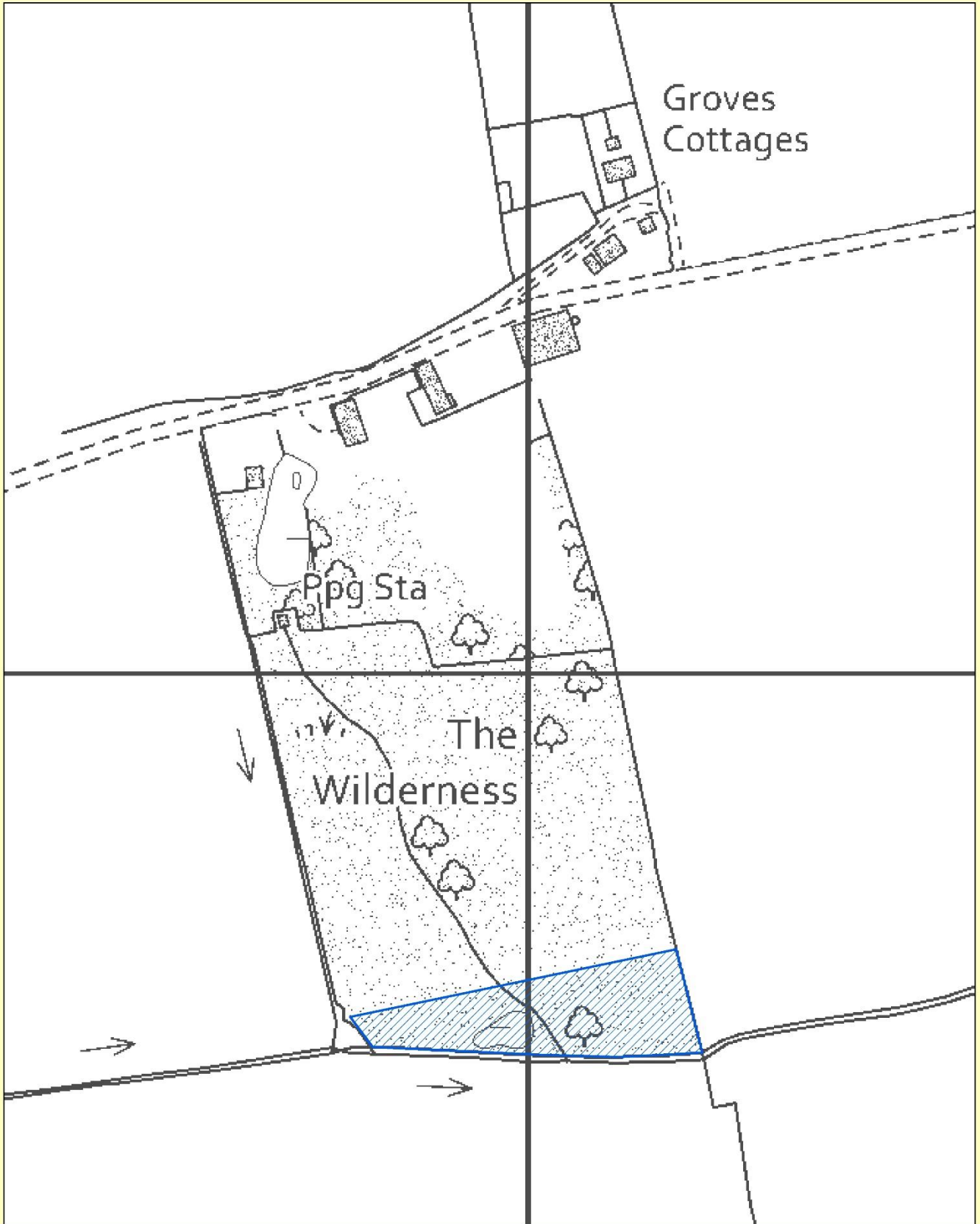
'180 (c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.' (NPPF)

'5.32 Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of the development, in that location, clearly outweigh the loss. Aged or veteran trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided. Where such trees would be affected by development proposals, the applicant should set out proposals for their conservation or, where their loss is unavoidable, the reasons for this.' (NNNPS)


The Applicant's without prejudice assessment of The Wilderness as ASNW (Annex B, Examination Document REP6-090)

- 5.7 We welcome the Applicant's submission of a without prejudice assessment of The Wilderness as ancient semi-natural woodland (National Highways Deadline 6 Submission - 9.132 Post-event submissions, including written submission of oral comments, for ISH9, Examination Document REP6-090).
- 5.8 Given Natural England's Ancient Woodland Inventory Unit's confirmation that the southern section should be classed as ASNW, we recommend the Applicant adopts its without prejudice assessment to take account of this new designation and amends the relevant control documents to account for the 0.44ha increase in the area of ancient semi natural woodland impacted by the scheme.
- 5.9 We strongly support any further avoidance of impact in this area through detailed design, and any further compensation that can be secured for impacts to what has now been confirmed as irreplaceable habitat.

Area of ancient woodland at 'The Wilderness'



Legend

 Ancient Woodland



Scale (at A3): 1:1,500

Map produced by Sean Hanna
Date: 17/11.2023 Map Reference: -
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6 Annex 6: Request to be heard at Compulsory Acquisition Hearings

6.1 Natural England does not wish to attend the compulsory acquisition hearings.

7 Annex 7: Natural England's confirmation of attendance at Issue Specific Hearings

7.1 Having reviewed the detailed agendas for Issue Specific Hearings 11-14, Natural England can confirm our attendance as follows:

Issue Specific Hearing 11 – Environmental Matters

7.2 Natural England will attend this Hearing in person and will be supported by the following colleagues:

- Alice Appleton
- Fatema Lookmanjee
- Jonathan Bustard (attending online)
- Neil Davidson
- Nick Grant
- Sean Hanna
- Jamie Melvin

Issue Specific Hearing 14 – the draft DCO

7.3 Natural England is likely to attend this Hearing virtually (but may join in person). We will be supported at this hearing by:

- Alice Appleton
- Nick Grant

7.4 We would be grateful if you could send the arrangements, including the dial in details, for these hearings to lrc@naturalengland.org.uk and copied to sean.hanna@naturalengland.org.uk and we can then ensure that they are forwarded to all colleagues as required.

7.5 Natural England will review the discussions for Issue Specific Hearings 12 and 13 and may choose to provide written advice at Deadline 8 in relation to these matters.