



Lower Thames Crossing

9.132 Post-event submissions, including written submission of oral comments, for ISH9

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1 Introduction

Please note: this document contains the Applicant's written summary of oral evidence and post-hearing comments on submissions made by others at Issue Specific Hearing 9 (ISH9) held on 23 October 2023.

Where the comment is a post-hearing comment submitted by National Highways, this is indicated. This document uses the headings for each item in the agenda published for Issue Specific Hearing 9 (ISH9) [[EV-068](#)] on 12 October 2023 by the Examining Authority (ExA).

1.1 Welcome, introductions, arrangements for the Hearing

- 1.1.1 National Highways (the Applicant), which is promoting the A122 Lower Thames Crossing (the Project), was represented at ISH9 by Andrew Tait KC, King's Counsel (AT).
- 1.1.2 The following persons were also introduced to the ExA:
- a. Tom Henderson, BDB Pitmans LLP, Partner (TH)
 - b. Nick Clark, Lower Thames Crossing, Ecology Lead (NC)
 - c. Dr Bruce Lascelles, Lower Thames Crossing, Agriculture & Soils Lead (BL)
 - d. Gary Hodge, Lower Thames Crossing, Highways Technical Lead (GH)
 - e. Dr Emma Long, Lower Thames Crossing, Environment Design Lead (EL)
 - f. Alison Powell, Lower Thames Crossing, Population and Human Health Lead (AP)
 - g. Russell Cryer, Lower Thames Crossing, Habitats Regulations Assessment Lead (RC)
 - h. Lisa Driscoll, Lower Thames Crossing, Water Environment Lead (LD)

2 Purpose of the Issue Specific Hearing

2.1.1 The Applicant did not make any submissions under this agenda item.

3 ExA Questions on: Ancient Woodland impact

3.1 Item 3a) Guidance and Methodology

Item 3(a)(i)-(iii)

Item 3(a)(i) What guidance was/should be followed by the Applicant in relation to the location, form, quantity and extent of ancient woodland replacement? – Is this methodology agreed by Natural England and other relevant IPs?; and

Item 3(a)(ii) Are the criteria used to determine whether a tree or woodland is classed as veteran or ancient employed for the project sufficiently clear and robust?; and

Item 3(a)(iii) Have physical surveys of woodland been completed to show the full extent of affected habitat and has the level of importance assigned to trees been based on an agreed methodology with Natural England and other stakeholders? Natural England has suggested using CIEEM good practice guidance. Is this approach justified and what additional work might be required?

- 3.1.1 The Applicant noted and accepted the ExA's request to address Agenda Items 3(a)(i), (ii) and (iii) together.
- 3.1.2 NC explained that the Applicant has been in discussion with Natural England (NE) for a number of years around the approach the Project should take to compensating the loss of ancient woodland. The guidance the Applicant has received goes back to advice from the "Defra family" in 2018, detailed in Annex One of Annex C1 to the Statement of Common Ground between the Applicant and NE [[REP5-038](#)]. This highlights the importance of habitat connectivity, looking to extend and buffer existing habitats and, specifically, creating a strong link between Great Crabbles Wood and Randall Wood along the A2 corridor, noting that all measures that have been adopted by the Applicant.
- 3.1.3 NC added that the Applicant has also followed published Government Guidance, developed by NE and the Forestry Commission and published on the Government website, on ancient woodland, ancient trees and veteran trees. The guidance states that, when looking to compensate for the loss of ancient woodland, measures could include the following:
- Create new native woodland and allow for natural regeneration
 - Improve the condition of the woodland
 - Connect woodland and ancient and veteran trees with green bridges, tunnels or hedgerows
 - Produce long-term management plans for new woodland and ancient woodland
 - Plant or protect individual trees that could become veteran and ancient trees in future
 - Monitor the compensation planting

- 3.1.4 NC noted that all of these recommendations have been included within the application and are secured within the Design Principles [[REP4-146](#)], the outline Landscape and Ecology Management Plan (oLEMP) [[REP4-140](#)], and the Environmental Masterplan (the references of which NC confirmed the Applicant would provide in writing as there are numerous references).
- 3.1.5 **Post hearing comment** – the references for the Environmental Masterplan are: [[REP4-124](#)], [[REP3-098](#)], [[REP2-018](#)], [[APP-162](#)], [[REP4-127](#)], [[REP4-129](#)], [[REP2-024](#)], [[REP2-026](#)], [[REP2-028](#)] and [[REP2-031](#)].
- 3.1.6 NC explained that the Applicant's overarching objective in terms of ancient woodland compensation planting has been to create new areas of high-quality woodland habitat which act to join up existing retained woodland habitats at a landscape-scale.
- 3.1.7 In the Statement of Common Ground between the Applicant and NE [[REP5-038](#)], at Item No. 2.1.64, NE state: “*Whilst Natural England does not endorse the impacts to ancient woodland, it has held constructive discussions with the Applicant regarding the mitigation and compensation measures that would be required if the scheme is granted consent. Natural England considers the proposed compensation measures will be of particular benefit where they help build nature recovery, and Natural England supports the landscape-scale approach that has been taken to identifying the proposed compensation areas, with its aim of enhancing the resilience of the affected sites by strengthening the ecological connectivity between them.*”
- 3.1.8 While the Applicant acknowledges that the loss of irreplaceable habitats such as ancient woodland cannot be mitigated, NC noted that the Applicant believes that its approach to ancient woodland compensation is robust and in line with Government guidance.
- 3.1.9 NC noted that the National Planning Policy Framework (updated 2023) defines ancient woodland as “*An area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites (PAWS).*”
- 3.1.10 The Applicant used NE's ancient woodland inventory and the Woodland Trust's ancient tree inventory to inform the identification of this habitat type, as detailed in Environmental Statement Chapter 8: Terrestrial Biodiversity [[APP-146](#)], Table 8.2. In addition to this, NC explained that the Applicant also used site survey information and has identified woodland areas which aren't listed in these inventories as ancient woodland because of the presence of ancient woodland indicator species and the woodland's presence on historic mapping such as Rainbow Shaw Local Wildlife Site, north of the River Thames.
- 3.1.11 NC noted that the National Planning Policy Framework defines an ancient or veteran tree as “*A tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient, but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage.*”
- 3.1.12 NC noted that the criteria applied to identification of an ancient tree are therefore age-related. An ancient tree is defined as one “*that has passed beyond maturity and is old, or aged, in comparison with other trees of the same*

species.” A veteran tree is one which exhibits some of the physical attributes associated with an ancient tree but without the requirement for it to be aged in comparison with other trees of the same species. A veteran tree would therefore be a mature specimen which, through the rigours of life, shows signs of ancientness. NC explained that the physical attributes of a veteran tree would typically include:

- a. A large girth (for the species)
- b. Crown retrenchment
- c. Decay to the stem, branches or roots
- d. The presence of wood decaying fungi

- 3.1.13 NC highlighted that the Applicant’s tree survey methodology is set out in ES Appendix 7.12: Arboricultural Impact Assessment [[APP-387](#)], paragraphs 2.5.13 to 2.5.18 inclusive. The Applicant’s tree survey was conducted with reference to the methodology detailed within British Standard BS 5837:2012 Trees in relation to design, demolition and construction.
- 3.1.14 NC explained that where possible, the Applicant looked to align veteran and ancient trees with desk study records and where this was possible the term ‘verified’ was used within the Arboricultural Impact Assessment [[APP-387](#)]. Where this was not possible, veteran and ancient trees identified solely via the tree survey where relevant criteria were met, are described as ‘potential veteran or ancient trees’ within this report. Both potential and verified trees are valued as nationally important.
- 3.1.15 NC confirmed that the Applicant has undertaken physical surveys of ancient woodland within the Order Limits. These are reported in ES Appendix 8.2: Plants and Habitats [[APP-391](#)] and ES Appendix 7.12: Arboricultural Impact Assessment [[APP-387](#)]. This also includes Rainbow Shaw local wildlife site which is not included in NE’s ancient woodland inventory but surveys indicated it may be ancient woodland.
- 3.1.16 NC explained that the valuation of importance assigned to trees, woodland and all other relevant ecological receptors is reported in ES Chapter 8: Terrestrial Biodiversity [[APP-146](#)] in Section 8.3 Assessment Methodology, specifically 8.3.44 – 8.3.46 and Table 8.5. NC noted that this approach follows the Design Manual for Roads and Bridges LA 108 Terrestrial Biodiversity (Highways England, 2020b), and aligns with good practice guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM). All ancient woodland and veteran trees have been valued as nationally important in the Applicant’s application.
- 3.1.17 In response to the ExA’s question regarding compensation, NC confirmed that the Applicant’s compensation sites for ancient woodland are all within the Order Limits, noting that these would have been considered in the Applicant’s phase 1 habitats surveys. NC noted that he did not have the relevant references available but that the Applicant could provide these in writing.

- 3.1.18 **Post-hearing comment:** Phase 1 Habitat Surveys were undertaken on all area of ancient woodland compensation planting, either through direct field survey or via desk-based assessment where access was not possible. The results of these surveys are reported in ES Figure 8.2: Phase 1 Habitat Map [[APP-263](#)], ES Figure 8.6: Phase 1 Field and Desk Based Assessment Coverage [[APP-267](#)], and ES Appendix 8.2: Plants and Habitats [[APP-391](#)].
- 3.1.19 In response to requests made by Natural England for an ‘in perpetuity’ (rather than “long-term”) commitment to habitats, AT confirmed that the Applicant would consider further and update the oLEMP to address this matter, noting that use of the phrase ‘long-term’ [[REP2-046](#)] was intended to connote permanence in relation to habitats. **Post-hearing note:** this is captured by hearing action point 2.
- 3.1.20 In response to the submissions made by IPs in respect of ancient and veteran trees, AT explained that there are Register of Environmental Actions and Commitments (REAC) commitments at LV-030, 31 and 32 in ES Appendix 2.2: Code of Construction Practice (CoCP) [[REP5-048](#)], which in addition to what is set out in the oLEMP [[REP4-140](#)], govern the position on relocating lost veteran trees, veteran tree replacement and veteran and ancient tree fencing.
- 3.1.21 In response to the submission made by Kent Downs Area of Outstanding Natural Beauty (AONB) regarding compensation planting and the extent to which landscape character has been taken into account, AT confirmed that the Applicant would respond fully in writing. **Post-hearing note:** the Applicant notes post-hearing action point 1, and will await comments at Deadline 6 from Kent Downs AONB Unit, Woodland Trust and Gravesham Borough Council before responding at Deadline 7.
- 3.1.22 EL added that the Applicant looked at planting by the land just north of Park Pale, between Great Crabbles Wood and Brewers Wood, as mentioned by Kent Downs AONB. EL highlighted the importance of maintaining key views in that area, particularly key landscape views, noting that this has been designed into open areas within that area of compensatory planting, but also to align with the public open space that sits within that block of woodland planting.

Item 3(a)(iv)

Item 3(a)(iv) possible means to improve the clarity of mapping and documentation on the location and size/extent of ancient woodland will be discussed.

- 3.1.23 NC explained that Figure 8.33 [[APP-294](#)] shows all areas of ancient woodland in and around the Order Limits, shown in light green hatching on the figure. NC explained that the dark green hatching shows ancient woodland compensation, the purple shows areas of ancient woodland impact/loss and the grey areas show nitrogen deposition compensatory planting, some of which is there to address degradation of ancient woodland. NC explained that there are impacts as a result of nitrogen deposition beyond those shown in Figure 8.33 which are shown in Appendix 8.14 figures [[APP-403](#)], noting that Figure 1 shows all designated sites including ancient woodland (high level) and Figure 2 shows the same but in further clarity as it is zoomed in.

Item 3(a)(v)-(vi)

Item 3(a)(v) How will lost ancient woodland be replaced, taking the following issues into account:

- the location(s) of source soil supplies;
- the benefits of translocating soils;
- how success will be monitored;
- how any deficiencies in outcomes will be addressed?

Item 3(a)(vi) How effectively can equivalently biodiverse replacement habitat be provided and in what timescale? • Do relevant IPs agree that the measures proposed by the Applicant are appropriate and have a reasonable prospect of success?

- 3.1.24 BL explained that the creation of replacement habitat for lost ancient woodland is detailed in the oLEMP [[REP4-140](#)]. The commitment to ensure the appropriate re-use of soils, aligned to the required land use/habitat, is set out in paragraph 10.5.8 (bullet g.) of ES Chapter 10: Geology and Soils [[APP-148](#)]. This paragraph references commitment GS009 as set out in the REAC in ES Appendix 2.2: CoCP [[REP5-048](#)]. BL added that Section 8.23.7 of the oLEMP [[REP4-140](#)] states that where practicable, the Applicant's aim is to utilise as much of the existing soil resource as possible from the existing ancient woodland areas directly affected by the Project.
- 3.1.25 BL noted that the salvage and re-use of soils is not a determining factor in the design or extent of the compensation proposed. As has already been stated, the overarching objective in terms of ancient woodland compensation planting has been to create new areas of high-quality woodland habitat which act to join up existing retained woodland habitats. BL commented that there is unfortunately limited published evidence on the value of salvaging and re-using ancient woodland soils, stools and deadwood. However, the Applicant notes that page 2 of the lessons learned document Ancient Woodland Soils Translocation (HS2, 2022), states the following:
- "HS2 Ltd believes that re-using ancient woodland soils will provide a better outcome for these important soil resources which have developed over hundreds of years compared to, for example, the disposal of this material or use in civils elements."*
- 3.1.26 BL noted that within other National Highways projects, two MSc projects with Cranfield University have been supported, looking at the physical, chemical and microbial characteristics of translocated ancient woodland soils compared to undisturbed ancient woodland soils. BL added that these are two of the very few studies which have been done and so are an important step forward in the Applicant's understanding. BL explained that the studies looked at the A2/M2 Cossington Fields ancient woodland translocation, a scheme which is cited as an example of best practice, and the A21 Tonbridge to Pembury. BL noted that these research projects have shown that the disturbance of the soil does result in changes to characteristics, and that these differences are evident three and 18 years following translocation of the soils. BL added that importantly, the

translocated soils in both studies were significantly closer in their microbial community composition to undisturbed ancient woodland soils compared to the soils associated with compensatory woodland planting on either arable soil or on subsoil.

- 3.1.27 BL explained that the 10 year ecological monitoring programme at Cossington Fields concluded that the salvage and re-use of ancient woodland soils had a positive impact on the successful establishment of a range of ground flora species which were not seen in this timeframe in areas of woodland planted on arable soils. BL noted that overall, there are benefits in salvaging and re-using, where practicable, the soils, stools and deadwood from the areas of ancient woodland directly affected by the Project. BL highlighted the oLEMP [[REP4-140](#)] which sets out the approach which would be followed. These steps would be as follows:
- a. Pre-construction botanical surveys would be carried out to produce a baseline for the donor areas and receptor sites.
 - b. A soil survey, to include sampling and testing, would be undertaken to confirm the compatibility of the receptor site in terms of the soil characteristics as well as general site characteristics such as slope and aspect.
 - c. These surveys would confirm the extent of soil which could be salvaged, taking into account constraints such as the presence of invasive or weed species or contaminated materials.
 - d. Based on a detailed understanding of the affected areas, a detailed specification would be developed for ancient woodland soil translocation in consultation with the advisory group – to include stringent soil protection measures and new tree-planting plans. The specification and detailed method statements would be submitted to the Advisory Group for comment prior to being finalised for use.
 - e. The works would then comprise the preparation of donor areas for soil removal (e.g. tree coppicing/felling/stump removal, debris removal) ensuring soil conditions are kept as favourable as possible (i.e. limiting disturbance and compaction from plant).
 - f. The receptor areas would also be prepared: for example, installing tree protection around any existing trees, removal of any debris, stripping and removal of existing topsoil, and removal of any compaction of exposed subsoil.
 - g. Soil from the donor areas would then be translocated to the receptor site, along with native coppice stools and deadwood material (generally within a single day).
 - h. Tree planting would be undertaken in the receptor areas. Trees planted will comprise native species recorded in the donor areas and locally sourced.

- 3.1.28 The detailed specification will be based on professional expertise and published guidance. In particular, key documents are:
- Habitat translocation – a best practice guide (C600) (CIRIA, 2003)
 - Guidance on understanding and managing soils for habitat restoration projects (Research Report No. 712) (English Nature, 2006)
 - Ancient Woodland soils translocation (HS2, 2022).
- 3.1.29 AT added that the relevant documents are the oLEMP [[REP4-140](#)], with the specific ancient woodland provision at LE8.2 and the individual management areas in Sections 5 and 6; and commitment GS009 in the REAC [[REP5-048](#)].
- 3.1.30 NC explained that in addition to measures related to ancient woodland soils, the Applicant includes a commitment in REAC item LV031 [[REP5-048](#)] to relocate the intact hulks of felled veteran trees and retained timber from unavoidable felling of ancient woodland. NC added that the individual ancient woodland compensatory planting management areas are described in sections 5 to 7 of the oLEMP [[REP4-140](#)].
- 3.1.31 NC explained that the aim of the suggested monitoring programme is to ascertain whether the outline measures of success listed above have been achieved, and whether maintenance operations or remedial actions are required.
- 3.1.32 NC added that after the five-year establishment period, long-term monitoring would be undertaken by the Applicant to assess the success of the woodland in terms of developing into the relevant target priority habitat. This would include fixed point or aerial photography to record overall habitat development within any given management area, as well as surveys following Common Standards Monitoring Guidance for Woodland Habitats (Joint Nature Conservation Committee, 2004). These would continue once every five years with the detailed monitoring approach being refined over this period as part of the Advisory Group discussions.
- 3.1.33 The Applicant recognises that the loss of ancient woodland cannot be mitigated for, but NC noted that the Applicant is proposing woodland planting both north and south of the River Thames, as detailed in ES Chapter 8 [[APP-146](#)]. In this assessment, at paragraph 8.6.55, the Applicant recognises that it would be expected that newly planted semi-natural woodland would take in excess of 30 years to become sufficiently established and mature to compensate for the predicted losses. The Applicant is characterising its impacts in line with relevant guidance, and its assessment includes the duration of an impact and whether it would be temporary or permanent. These are reported in Section 8.6 of ES Chapter 8: Terrestrial Biodiversity [[APP-146](#)], noting that the Applicant accounts for the time lag mentioned, not only for the habitat itself but also for any species receptors that those habitats may support. NC added that the creation of the habitat is outlined in oLEMP [[REP4-140](#)], in Section 8.23.
- 3.1.34 BL, in response to the ExA's query regarding assumptions relating to soil conditions, explained that if the soil conditions between the areas being translocated and the donor areas are divergent, then it will affect the success of the Project. BL noted that the process which has been outlined in terms of

surveys and the process involved, is designed to minimise potential divergence in the site characteristics. BL noted that important considerations include topography, the relief, the angle of the slope and the aspect. BL explained that generally, the receptor areas are probably going to require topsoil to be removed, on the assumption that it is likely to have had fertiliser or other chemicals added to it, as well as the Applicant wanting to move the topsoil from the ancient woodland sites in addition. BL explained that the key is making sure that subsoil in those receptor sites is comparable in terms of its texture, its drainage and its pH.

- 3.1.35 BL noted that the Applicant has not done all of the proposed surveys yet, but highlighted that the Applicant has a wealth of information on the soils from agricultural land classification surveys which have been undertaken, as presented in ES Chapter 10: Geology and Soils [[APP-148](#)]. This information was gathered specifically to understand the agricultural land classification grades, but the Applicant notes the need for additional work. BL added that the process by which soil is moved and receptor areas made ready, is all designed to ensure those differences do not exist.
- 3.1.36 In response to the ExA's query regarding delivery of translocation, BL confirmed that the wording "where practicable" comes from guiding principles which relate to invasive weed species and contamination, which are the aspects which potentially prevent translocating all ancient woodland soils, noting that there should not be any other significant constraints. BL explained that the process of translocation is not easy, due to the difficulty in moving soils from around roots, where soils are often dry and very thin. BL noted however, that there are specialist contractors who can achieve such translocation.
- 3.1.37 BL noted that from experience, woodland edge issues do exist, such as bramble growth, asbestos and fly tipping etc. The Applicant is able to identify those aspects and the information gathered from surveys would clarify the full extent of the ancient woodland affected and the areas from which the Applicant believes it is possible to salvage material. BL further noted that the HS2 guidance document (HS2, 2022) utilises a grid pattern, whereby a grid network is identified, with soils from each grid unit moved to a particular location in order to match up the characteristics of the donor and receptor sites.
- 3.1.38 In response to the ExA's query regarding duration of monitoring, AT noted that the position is set out in the oLEMP [[REP4-140](#)], and at paragraph 4.1.8, it states that the monitoring party is to work collaboratively with the advisory group and provides for an annual monitoring report to be prepared by the monitoring party, with extensive consideration of the role of the advisory group and the terms of reference for that. AT noted that the reference to 30 years is not a constraint within the body of that document; rather it is an output from whatever the monitoring party and advisory group consider appropriate.
- 3.1.39 NC noted that in terms of monitoring any habitat, the ongoing management is secured as part of oLEMP [[REP4-140](#)], so its monitoring is integral to its management, noting that management cannot strictly be undertaken without appropriate monitoring. In terms of intensity, the Applicant would look to monitor and manage more intensively in its early establishment. NC added that quite often, annual monitoring occurs in the first five years and then following

discussions within the advisory group, this could be extended to biannual and then possibly every 5-10 years thereafter.

- 3.1.40 In relation to the query raised by Gravesham Borough Council regarding site selection, AT confirmed that the Applicant would respond in writing. **Post-hearing note:** the Applicant notes post-hearing action 1, and will await comments at Deadline 6 from Kent Downs AONB Unit, Woodland Trust and Gravesham Borough Council before responding at Deadline 7.
- 3.1.41 BL, in response to queries about the wording “where practicable”, clarified that the purpose of the surveys and the assessments undertaken are to understand the current condition and nature of the soil. The Applicant would then want to try to replicate that soil profile, meaning that the Applicant would not be looking to spread the topsoil thinly across receptor sites. BL clarified that the Applicant would want to move the soil from donor sites into a comparable area to replicate the characteristics of the ancient woodland soils as much as possible.

3.2 **Agenda Item 3b) Removal of Ancient Woodland and Veteran Trees**

Item 3(b)(i)

NPSNN para 5.32 requires the Secretary of State to carefully consider loss and damage to ancient woodland and veteran trees. • Can the Applicant provide clarification about loss/harm minimisation at: - The A2/M2/LTC intersection; - The M25/LTC intersection; and – Other parts of the proposed alignment, work areas and compounds with woodland loss. • The Applicant will be asked to explain why it was decided to undertake work affecting wooded areas/ veteran trees and not to realign, re-design, or substitute land use or construction techniques to protect the woodland/ veteran trees?

- 3.2.1 AT referenced plans that were referred to at ISH3 on 5 September 2023 [[REP4-211](#)] and also the Project Design Report, Part D [[APP-511](#)].
- 3.2.2 GH explained that the Applicant has carefully considered loss and damage to all woodland, in particular ancient woodland and veteran trees, as part of the iterative process for design development set out in ES Chapter 2 Project Description [[APP-140](#)] and Chapter 5 of the Planning Statement [[APP-495](#)]. GH confirmed that they are recognised as key constraints.
- 3.2.3 In turning to the plans referenced by AT, GH addressed each of the specific locations highlighted by the ExA in the Agenda:
- a. **A2/ M2/LTC intersection – Shorne Wood:** The highway alignment along this section is constrained by HS1 to the south and the north limit of the existing A2 corridor. The Applicant sought to keep the road widening within the existing highway boundary. This has resulted in the loss of woodland in the central reserve, which is not ancient woodland or Site of Special Scientific Interest (SSSI). By doing this, the Applicant could keep the highway footprint within the limits of the highway boundary. The ancient woodland north of the A2 in Shorne Woods is impacted by utility diversions of Work No. G1a (installation of a medium-pressure gas pipeline) and MU7

- (installation or diversion of underground utilities). It was concluded that it was not feasible to place the utility diversions under the new road and the utility corridor was required on the north side of the existing highway land. Southern Gas Networks (SGN), the relevant statutory undertaker, would be resistant to installation of the gas pipeline under roads forming part of the strategic road network. SGN will require access to their asset for maintenance therefore they could not be placed under the highly trafficked strategic roads in this area due to the significant disruption and loss of capacity any maintenance works would cause. Through ongoing design refinement, the Applicant has reduced the land take requirements for utility-related works from 60 metres at Statutory Consultation by approximately 30-35 metres along this section between Thong Lane and Brewers Road (which is a distance of approximately 600 metres).
- b. **Shorne/Brewers Wood (further to the east):** By aligning the gas main diversion under Park Pale and the existing footpath, the Applicant has removed the impact on Shorne/Brewers Wood north of Park Pale on the section east of Brewers Road, noting that there is a small section of ancient woodland on the junction which is marginally affected.
 - c. **Claylane Woods:** The ancient woodland north of the A2, Claylane Wood, is impacted by the local connections from Gravesend East to the M2 eastbound and the A122 Lower Thames Crossing northbound. The impact of this link is limited to the southern edge of the woodland. The Gravesend East to M2 eastbound slip road was included after feedback from stakeholders and members of the public at the Statutory Consultation. As explained in ISH3 on 5 September 2023, the constraints of HS1 to the south, the village of Thong to the east and the alignment north through the pinch point between Riverview and Thong make this a constricted area. The alignment geometry of all the links in this area have been carefully considered and set out to minimise the impact of all these constraints on the south edge of the wood. The wood is also affected by utility diversions including an overhead powerline (Work No OH1) and three gas pipelines (Work Nos G1b, G2 and G3). For further details of the Works, refer to ES Chapter 2 Project Description [[APP-140](#)]. The utility diversions are consequential upon the works to the highway corridor. Through the pre-application design process, the Applicant sought to minimise the extent of utilities works in Claylane Wood, with the Applicant recording 4.2ha of ancient woodland loss, with 0.42ha attributable to the road, and the remainder attributable to utilities works.
 - d. **The M25/A122 Lower Thames Crossing interchange:** There are no impacts on ancient woodland or veteran trees at the M25/A122 Lower Thames Crossing interchange at the Ockendon Road location. The mainline through M25 junction 29 needs to be widened from three to four lanes north

and southbound. This has a minor impact of an approximate distance of 10 metres either side of the existing highway over a distance of approximately 250 metres on both north-facing slip roads during construction which are adjacent to ancient woodland. Retaining walls have been included between the slip roads and mainline to avoid the slip roads having to be realigned. However, a narrow width of ancient woodland is required to enable construction. The Applicant displayed plans showing the existing situation and situation post-statutory consultation, noting that the total loss is 0.4 hectares of ancient woodland. In undertaking these works on the slip roads, the Applicant is providing compensatory planting immediately adjacent to the woods.

- e. **Other parts of the alignment** – Rainbow Shaw Wood: between Chadwell St Mary and Linford, is a Local Wildlife Site that contains an area of ancient woodland. This was identified and confirmed through Project surveys. The road alignment through this area is constrained by a significant amount of overhead lines (OHL) stretching from Tilbury and then running north of Chadwell St Mary. If the road alignment had been pulled further south-west to avoid the wood it would have required additional significant OHL realignment/re-stringing and would result in the utilities moving closer to residential areas at Chadwell and West Tilbury (ES Chapter 3: Assessment of Reasonable Alternatives, paragraph 3.28.24 [[APP-141](#)] explains this). The wood is also impacted by the provision of the Hoford Road green bridge because the Applicant needed to keep it on or as near as possible to its original alignment, as it is an important bat flightline. The total loss is 1.2 ha of ancient woodland.

- 3.2.4 The Applicant does not require any temporary vegetation clearance for compound or utility hubs that would affect ancient woodland or veteran trees. The Project identifies the potential loss of six veteran trees; three south of the River Thames and three north. The tree references are: T41, T133, T145, T362, T363 and T570. The locations of these trees are shown on: page 3 of 51; 25 of 51; and 43 of 51 of ES Figure 7.24: Tree Removal and Retention Plans [[REP1-151](#)]. Through the design process, the loss of veteran trees was reduced from twelve to six. It was not possible to amend the preliminary design to reduce this further. However, Design Principle LSP.01 [[REP4-146](#)] and REAC item LV001 [[REP5-048](#)] provide a commitment to retain trees where possible through detailed design and into construction.
- 3.2.5 In response to submissions made by IPs in respect of the Project's impacts on Rainbow Shaw Wood, KH provided a high level explanation as to why this was necessary as a result of pre-application design development involving overhead line diversions, and confirmed that the Applicant would submit a full explanation in writing. **Post-hearing note:** the full explanation is provided at Annex A.9 in response to hearing action point 10.
- 3.2.6 In response to comments from IPs and the ExA regarding the potential impact of candidate veteran trees at Shorne Woods in the proximity of the CA2 (Thong

Lane) construction compound, the Applicant clarified that the trees are not within the compound, but are on the alignment of the proposed footpath running south from the proposed Thong Lane car park. The Applicant's provisional position is that those trees that are potential future veteran trees can be preserved by moving the footpath to the other side of the road, rather than removing the candidate veteran trees. AT confirmed that the relevant plan to demonstrate the above proposal is [REP4-084] but noted that the Applicant will take this issue into consideration and reflect on its position. **Post hearing note:** a further response to this matter is contained an Annex A.8 in response to hearing action point 8.

- 3.2.7 AT concluded the Applicant's submission on this agenda item by noting that the tree removal and retention plan is at Figure 7.24 [REP1-151]. AT also referred to the Design Principles [REP4-146] that would mitigate and minimise woodland impact at detailed design stage: in relation to the woodland north of the A2/M2 corridor, S1.01, requiring existing planting along the northern edge to be retained; and in relation to Claylane Wood, S2.06, which is in similar terms.
- 3.2.8 **Post-hearing written submissions:** These are contained within Annex A and include:
- a. Section A.2: Hearing Action Point 2: OLEMP Definitions
 - b. Section A.3: Hearing Action Point 3: OLEMP Definitions
 - c. Section A.4: Hearing Action Point 4: Ancient Woodland loss/compensation
 - d. Section A.5: Hearing Action Point 5: Soil Management
 - e. Section A.6: Hearing Action Point 6: Utilities Plan
 - f. Section A.7: Hearing Action Point 7: Ancient Woodland and Utility Alignments
 - g. Section A.8: Hearing Action Point 8: Candidate Veteran Trees – Shorne Woods Country Party
 - h. Section A.9: Hearing Action Point 10 Overheard Power Line – Chadwell St Mary (response on effect of moving utilities alignment at Rainbow Shaw in relation to Ancient Woodland).
 - i. Section A.10: Provide Environmental Masterplan reference numbers

4 ExA Questions on: ‘The Wilderness’

4.1 Item 4a) ‘The Wilderness’

Item 4(a)(i)

Item 4(a)(i): There is disagreement over whether ‘The Wilderness’ (woodland located near The Grove, North Road, North Ockendon) should be regarded as ancient woodland subject to the policy set out in NNNPS paragraph 5.32. • What is Natural England’s current position? • The Applicant and relevant IPs will be asked to confirm their position and highlight evidence to support their assessment.

- 4.1.1 AT explained that the Applicant set out its position on page 64 [[REP1-183](#)] in response to ISH1 matters. In summary, Phase 1 habitat surveys and bryophyte and lichen surveys of ‘The Wilderness’ were completed and there were no ancient woodland indicator species found to be present. AT also explained that there has been detailed consideration of historic mapping going back to the 17th century and none of this supports ancient woodland status. The Applicant notes that NE is considering further evidence, of which the Applicant awaits receipt.
- 4.1.2 In response to the ExA’s question, AT confirmed that the Applicant will seek to outline a without-prejudice case to account for any finding that The Wilderness is ancient woodland. **Post-hearing note:** the Applicant has addressed this in response to hearing action points 12, Section B.2 of this document.

Item 4(a)(ii)

Item 4(a)(ii): A retaining wall is proposed to the south of this area, apparently to limit the extent of woodland loss. • Will this meaningfully limit effects on the woodland during construction and operation?

- 4.1.3 EL explained that in relation to the road going through the Wilderness, there is an embankment with retaining walls. If the Applicant had simply maintained an open space cutting along here, rather than retaining wall, the diverted watercourse and subsequently utility diversions would have to push north to avoid the top of the cutting. Without a retaining wall, the Applicant considers that another 25-30 metres width of woodland would be lost from the top of the proposed area the Applicant is currently impacting, which would increase the loss of woodland associated with The Wilderness. Therefore, the Applicant highlights that the retaining wall approach does save some areas of woodland and certainly more than would have been the case without that design intervention.
- 4.1.4 Since discussions have been held in acknowledgement of The Wilderness’s sensitivity, EL noted that the Applicant acknowledges the need to further minimise the loss of vegetation and tree clearance at this locality, which is in line with the existing REAC commitment [[REP5-048](#)] LV001 “*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)*”. Although the Applicant has thereby already committed to look at this in more detail, EL confirmed that the Applicant has taken steps to accelerate that,

given the concern flagged, in order to assess what more can be done within the limits of deviation that the Applicant currently has for the design.

- 4.1.5 EL explained that the Applicant may be able to extend the northern retaining wall slightly further east, so as to pull the location of the watercourse further south. The Applicant has proposed a REAC amendment for the CoCP [REP5-048] for the temporary utilities diversion that would make a commitment to ensure that there was no loss of woodland as a result of the utility diversion. EL explained that this would result in a potential increase in the retained area of woodland at The Wilderness by 4,000 square metres. AT confirmed that the Applicant anticipated these two additional commitments coming forward at Deadline 6 on 31 October 2023. **Post-hearing note:** further information is provided in Annex B.

Item 4(a)(iii)

Item 4(a)(ii): At Accompanied Site Inspection 2 (ASI2) on 13 September 2023, the ExA was shown two watercourses within the area that also serviced ponds. • What measures are expected to be required to prevent the loss of the waterside and water-based habitat during works in ‘The Wilderness’? • Are those measures in place and are they adequate?

- 4.1.6 EL explained that the watercourse that flows from north to south through The Wilderness would largely remain undisturbed. It currently discharges into a watercourse that flows from east to west on the bottom of the woodland. This watercourse flows along the alignment of the proposed A122 Lower Thames Crossing and so requires diversion, together with a short reach of the downstream end of the watercourse that flows through The Wilderness. The diversion (Ref D-EFR-4-02) which is described in further detail in Part 10 of the Flood Risk Assessment [APP-477] would not result in transfer of flow into or out of the hydrological catchment in which The Wilderness is located and as a result there would be no change overall to the current hydrological regime that supports water-based habitat.
- 4.1.7 EL explained that, in line with best practice, the watercourse diversion would be established prior to the existing watercourse being removed. Watercourse diversion channels would be designed reflect the size and form of existing channels to accommodate baseline flow and sediment regimes and would be naturalised, and not just a canalised stream (Design Principle S9.10 [REP4-146]).
- 4.1.8 EL continued to explain that the watercourse network within the area of The Wilderness feeds into the Mardyke, a Water Framework Directive designated waterbody. The impacts of the Project on this waterbody and the potential for Project activities to cause deterioration of any of the quality elements that support its status have been assessed in Section 4 of the Water Framework Directive Assessment [APP-478], which concludes a negligible risk of waterbody deterioration as a result of diversion.
- 4.1.9 EL noted that due to the highway alignment, the southernmost pond within The Wilderness would be lost under the footprint of the road, but noted that the Applicant has made provision for a replacement pond nearby in order to reduce any further impact to The Wilderness through a new pond creation within the woodland, and is located adjacent to North Ockendon Pit Metropolitan Site of

Importance for Nature Conservation, which is an area of high-quality Open Mosaic Habitat.

- 4.1.10 In response to the ExA's query on water retention in the ponds, AT confirmed that the Applicant would put their response in writing. **Post-hearing action:** this has been addressed in response to hearing action point 17 at Annex B.4 of this document.
- 4.1.11 Similarly, in respect of the site selection process query raised by Thurrock Council (TC), AT confirmed that the Applicant would respond in writing. **Post hearing note:** The Applicant notes that Interested Parties have been invited to comment on this matter by Deadline 6 (Hearing Action Point 1). The Applicant will respond to these matters at Deadline 7.
- 4.1.12 NC responded to the ExA's query regarding security of mitigation and longevity and confirmed that this would be in line with all essential ecological mitigation proposed as part of the Project and that it would be managed to be maintained in the long-term.
- 4.1.13 **Post-hearing submissions:** These are contained within Annex B and include:
- a. Section B.2: Hearing Action Point 12: The Wilderness – Status (Ancient Woodland)
 - b. Section B.3: Hearing Action Point 15: The Wilderness – Retaining Wall
 - c. Section B.4: Hearing Action Point 17: The Wilderness – Watercourses

5 ExA Questions on: Shorne Woods SSSI

5.1 Item 5a) Shorne Woods SSSI

Item 5(a)(i)

Item 5(a)(i): Concerns have been raised that recreational facilities proposed at the Shorne Woods Country Park could have a negative effect on the SSSI. • Have the effects of the proposed facilities been assessed within the submitted documentation? • Are the effects considered appropriate and to have been appropriately mitigated?

- 5.1.1 AP explained that the recreational facilities proposed at Shorne Woods Country Park comprise:
- The creation of a new car park on the site of the A2 construction compound once this use is completed. Facilities proposed comprise an area of hardstanding appropriate for around 100 vehicles.
 - Access from the car park into the Country Park is facilitated by a Pegasus Crossing over Thong Lane and a short section of new bridleway connecting to existing walking, cycling and horse-riding routes within the Country Park.
 - A section of non-segregated footway/cycle/horse-riding track along the eastern side of Thong Lane which follows the line of a current footpath at this location. This footpath is being re-provided following earthworks being undertaken at this location as part of works necessary to construct the Thong Lane green bridge to the south. It is not necessarily the provision of the recreation route that is driving vegetation loss, but primarily earthworks unrelated to the recreational route.
- 5.1.2 AP explained that the car park and associated facilities are described as an environmental enhancement in paragraph 13.5.39 of ES Chapter 13: Population and Human Health [[APP-151](#)] and are secured by Design Principle S2.11 [[REP4-146](#)].
- 5.1.3 The Applicant notes that Kent County Council (KCC) is supportive of the principle of the proposed car park at Thong Lane and that this is noted in their Statement of Common Ground [[REP1-103](#)] (item 2.1.5).
- 5.1.4 AP added that paragraphs 13.6.144 and Table 13.69 of ES Chapter 13: Population and Human Health [[APP-151](#)] reference the car park as part of the assessment of potential impacts on community land during operation, noting that the new car park provides additional means of access to the Country Park and wider countryside.
- 5.1.5 The Applicant's position is that the effects of recreational facilities on the SSSI have been assessed by the Applicant, with details of the assessment provided in Appendix A of the Environmental Statement Addendum [[REP5-062](#)]. The assessment has considered the use of the car park together with accompanying recreational facilities (café, toilets, cycle hub) as a worst-case assessment. 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. AP added that 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.

- 5.1.6 The Applicant is aware that NE made further comments in relation to this assessment in their Deadline 2 submission [[REP2-090](#)] requiring further clarity in relation to a number of matters including further detail around the number of vehicles using the car park, the number of additional visitors accessing the SSSI and a broad breakdown of activity of car park users.
- 5.1.7 The Applicant has held two further meetings with NE to explore these issues in further detail. AP explained that the Applicant has informally shared with NE a more detailed annual profile of estimated visitor numbers to the Thong Lane car park based on occupancy and vehicle turnover assumptions to provide further reassurance. The profile has taken into account evidence-based assumptions from the existing Shorne Woods Country Park (for example in relation to the average length of stay of visitors) and this information, together with a broad breakdown of activity of car park users, setting out the likely proportion of walkers, cyclists and horse riders will be provided as part of the responses to the further written questions set out by the ExA (questions 11.4.1 and 11.4.2) which will be submitted at Deadline 6 on 31 October 2023.
- 5.1.8 The Applicant's position is that this assessment, and the effects identified, are considered appropriate, and that no additional mitigation is required. AP noted that an extract from the Shorne Woods Country Park Management Plan 2021-26 (KCC, 2022) states that, in terms of visitor objectives "*Public enjoyment and recreation are a key feature of the site. The site aims to attract more visitors at all times of year. The site also aims to educate and inform the public on conservation and environmental issues whilst also promoting healthy living and wellbeing*".
- 5.1.9 In response to ExA's query relating to the car park, AT confirmed that additional facilities have been assessed for the purposes of EIA, but they are not authorised by the DCO [[REP5-024](#)] and there would need to be a separate planning permission for the additional elements.
- 5.1.10 In response to submissions made by IPs, AT confirmed that the Applicant is happy to provide the information requested, in particular in relation to NE's comment regarding further information relating to assessment of impacts to the designated site. In relation to the car park proposal, the Applicant's understanding is that this is in line with KCC's aspirations, so this was responded to as a proposed legacy element rather than to avoid reinstatement. AT noted that the Applicant is clear about KCC's position with or without the additional facilities and AT confirmed that the Applicant would reflect on this and the comments of other stakeholders. In response to the ExA, AT confirmed that the Applicant has assessed the additional facilities because at that time, there was a prospect (and still is) of a planning application being made by KCC, so the Applicant wanted to ensure this was included on a cumulative basis, despite not being part of the Applicant's proposal. In response to Gravesham Borough Council's submission, AT confirmed that the Applicant has assessed a kiosk, rather than a restaurant facility or anything larger. Finally, AT confirmed that the

Applicant would respond in writing in respect of queries relating to increase in visitors to the SSSI and how that affects the environment. [Post-hearing note: This is contained within Annex C.3 of this document].

Item 5(a)(ii)

Item 5(a)(ii): Can Natural England and the Applicant confirm that the disputed boundary of the SSSI has been resolved and that all data relevant to an assessment in this location have also been provided in documents available to the Examination?

- 5.1.11 NC explained that the Applicant responded at [REP2-046] to the Shorne and Ashenbank Woods SSSI boundary issue raised by Natural England in their written representations [REP1-262] that identified an error between their published dataset and their internal boundary mapping records. The Applicant's response was to update its assessment using this newly received boundary. NC noted that the Applicant's conclusion was that this new boundary did not change the Applicant's original assessment of the likely significant effect on the SSSI.
- 5.1.12 NC explained that in NE's Deadline 4 Submission [REP4-324], NE acknowledged this revised assessment and requested that the Applicant provided a revised figure showing the amended SSSI boundary. The Applicant has submitted that revised figure in the Statement of Common Ground (SoCG) between the Applicant and NE at Deadline 5 [REP5-038], in Annex C.16. This SoCG refers to this matter under item number 2.1.104 as a Matter Under Discussion. It is the Applicant's view that this can now be moved to a Matter Agreed.

Item 5(a)(iii)

Item 5(a)(iii): Does the Applicant or any other relevant stakeholder/ land manager anticipate any further refinement of the use of SSSI during the detailed design stage?

- 5.1.13 AP explained that the proposed level of Thong Lane lifts from about 2.5 metres from north to south and that measurement is taken from the central point of the proposed new carriageway such that it can meet the required elevation for the Thong Lane green bridge to the south. AP explained that this elevation needs to be supported by earthworks and the footpath heading north/south along the eastern side of Thong Lane is then re-provided on top of the embankment that has been created. The Applicant intends taking into account the KCC comments, noting that there will be refinements as part of detailed design and taking into account relevant design principles. AP confirmed that there is LSP-01, retention of existing vegetation, which is in the Design Principles [REP4-146] and then also measures contained in the REAC, including LV-001 [REP5-048]. AP explained that measure LV-001 relates to reducing the removal of trees and vegetation as far as reasonably practicable in accordance with the oLEMP [REP4-140] and the Environmental Masterplan [REP4-124, REP3-098, REP2-018, APP-162, REP4-127, REP4-129, REP2-024 to REP2-031]. The Applicant displayed the relevant plan [REP2-072] to demonstrate the walking and cycling routes within this area along the east of Thong Lane, connecting into the Shorne Woods Country Park.

- 5.1.14 AT noted that the Applicant anticipates providing its proposals to KCC in the first instance and then developing a section to demonstrate what may be possible. The Applicant noted the ExA's agreement to this approach.
- 5.1.15 AT added in response to the comments made by the Woodland Trust relating to surfacing of the diverted N1-77 to the south of the A2, that there is a specific design principle (S-105) [**REP4-146**] which expressly deals with the way surfacing is to be addressed.
- 5.1.16 **Post-hearing written submissions:** These are contained with Annex C and include:
- a. Section C.2: Hearing Action Point 18: Shorne Woods Country Park – Retention of Proposed Car Park Adjacent to the Park
 - b. Section C.3: Response to Examining Authority query on impact of more visitors on SSSI
 - c. Section C.4: Shorne and Ashenbank Woods SSSI boundary revision

6 ExA Questions on: Coalhouse Fort

6.1 Item 6a) Habitat Provision

Item 6(a)(i)-(ii)

Item 6(a)(i): As part of the mitigation for the loss of land used by species associated with the Thames Estuary and Marshes Special Protection Area (SPA) and Ramsar site, it is proposed to provide alternative land at Coalhouse Fort. • What measures are proposed to reduce the potential effect to the existing species that utilise the existing non-designated habitat in the area? • Wetland habitat creation is proposed in an area that currently appears to be rough grassland. Is it possible that one ‘important’ habitat is being replaced by another?

Item 6(a)(ii): Are there locations where the loss of one valued habitat to facilitate the creation or replacement of another are suggested to arise? (Note in this context, the loss of cultivated agricultural land is not under consideration.)

- 6.1.1 RC explained that the objectives of the wetland creation, as set out in the oLEMP [[REP4-140](#)], are to create wetland habitats including scrapes, ditches and grassland. The habitats created will enhance the habitat for all existing species that use the site already. The current site is primarily arable farmland with a straight linear ditch through the middle, with very limited ecological or species interest. RC noted that the ditches do have some interest for micro-invertebrates and the flood embankments have some rough grassland that supports some species of interest. The Applicant is intending to create habitats to enhance these. RC clarified that the embankments would not be affected by the wetland creation and the ditches would be increased and enhanced in their ability to support species that use ditches in the area. RC noted that there will be much more ditch habitat suitable for species than there is there at the moment, noting that the Applicant does not consider it necessary to propose measures to reduce effects on species on this site.
- 6.1.2 RC added however, that if the Applicant does find some features of interest, Design Principle LSP.01 (Retention of existing Vegetation) [[REP4-146](#)] states that all existing vegetation shall be retained as far as reasonably practicable in order to (among other things) preserve its intrinsic ecological value. RC clarified that if anything was found with intrinsic value, the Applicant would want to retain, enhance and build on that value, rather than replacing it with something else.
- 6.1.3 RC explained that the only “rough grassland” within the site for wetland creation that the Applicant is aware of, lies on the flood embankments, which will be retained. The wetland creation is only proposed within the low-lying arable ground behind the embankments that can be wet, and not on the surrounding banks.
- 6.1.4 In response to the ExA’s query in relation to securing measures if features of interest are found, RC explained that that detailed design process will look at what the Applicant wants to achieve and how to do so. The Applicant will

investigate what features there might be in order to determine what vegetation is necessary to retain, in line with the design principle. RC noted that the Secretary of State would have the ultimate decision in approving any detailed design through the LEMP process before it is delivered. RC clarified that there is a very low possibility of finding anything of particular interest, because the Applicant has already surveyed the land and from the phase 1 habitat survey, this is arable field with a straight agricultural ditch going through the middle and is very unlikely to be a biodiversity hotspot.

- 6.1.5 In response to the submission made by Holland Land & Property representing affected landowners, RC explained that the new water regime will be very similar to the existing regime, as although river water will be let on through a new structure, river water is currently let on through the moat system of Coalhouse Fort. RC explained that the hydrological and salinity levels will be the same, noting that the Applicant has been talking to NE who want to maintain the salinity gradients across the site because the gradient provides the variability for different types of invertebrates. In terms of long-term management, RC explained that the prescriptions for that will be set out in detailed design and secured through the oLEMP [REP4-140]. RC clarified that the Applicant will be responsible for this and that any third party it may use to carry that out is set out in the EMP iteration 3.

7

ExA Questions on: Hole Farm Community Woodland

7.1 Item 7a) Habitat Creation

Item 7(a)(i)

Item 7(a)(i): Extensive open space and habitat creation is proposed at Hole Farm. • Which elements are required as mitigation or compensation for the Lower Thames Crossing and which elements are to meet the needs of the National Highways more general Environment Strategy? • What is the current status of the planning application for the Hole Farm project? • How will the expected programme of works at Hole Farm tie into the Lower Thames Crossing proposals? • Is the Hole Farm project contingent on the granting of development consent for the Lower Thames Crossing? • Are community woodland creation (including recreational public access) and habitat creation objectives at Hole Farm compatible? How can compatibility be maximised?

- 7.1.1 TH explained that the Applicant submitted a paper at Deadline 4 [[REP4-213](#)] which responds to action points that arose from ISH6 and ISH7. That paper addresses the elements required at Hole Farm as mitigation or compensation for the Project and those elements required to the Applicant's general environmental strategy.
- 7.1.2 TH explained that the elements of the Hole Farm proposal that are connected to the Project specifically are:
- Ancient woodland compensation (26ha)
 - Compensation for nitrogen deposition (75.2ha)
 - Replacement Special Category Land (open space) (2.9ha)
- 7.1.3 TH clarified that none of the elements above are claimed in relation to the Town and Country Planning Act 1990 (TCPA) planning application in respect of Hole Farm, nor are they claimed specifically against any wider National Highways environmental strategy. TH added that the TCPA elements for the community woodland do align with National Highways' wider sustainability strategy in order to manage the land it holds in the public interest. This site is capable of being made available to the public in line with National Highways' wider strategy, noting that the funding for the elements in the TCPA application derives from that wider strategy ("designated funds").
- 7.1.4 TH explained that Hole Farm would be leased to and managed by Forestry England, and they are the applicant for the TCPA application.
- 7.1.5 In terms of the current status of the planning application for Hole Farm, TH noted that the TCPA application is currently delegated to officers at Brentwood Council, as the relevant planning authority, with a recommendation to approve, subject to conditions. TH noted that the window for councillors to call the matter to the Planning Committee ended on 13 October. The Applicant understands

that a decision is imminent, and TH confirmed that the Applicant would provide an update to the ExA as soon as possible.

- 7.1.6 In respect of the expected programme of works at Hole Farm, the Applicant displayed a plan which it is proposing to submit at Deadline 6 on 31 October 2023. TH noted that the plan is a hybrid overlay of the TCPA and DCO proposals. TH highlighted the elements that form part of the TCPA application, including the access road into the car park, a visitor centre, a network of paths and a number of ponds.
- 7.1.7 TH clarified that the ponds are the only element of the TCPA application that overlaps with DCO application. The Applicant is seeking to establish these ponds at an early stage so that their delivery does not impede the development of advanced compensating planting. Unlike the advanced planting, the ponds constitute “development” and require planning permission. TH added that early planting of trees and vegetation aligns with the DCO compensation strategy. Planting commenced in December 2022, and there will be a further phase this winter and a third phase the following winter.
- 7.1.8 TH explained that the Hole Farm community woodland is not contingent upon the granting of development consent through the Project, as the community woodland would be established on this site regardless of whether the Project comes forward.
- 7.1.9 TH clarified that the Applicant considers there to be no double-counting associated with this site, adding that the proposals were materially changed in terms of habitat creation when Hole Farm was appropriated for the Project, as set out in Applicant’s submissions following ISH6 and ISH7 [[REP4-213](#)].
- 7.1.10 TH explained that there was an important compulsory acquisition principle underpinning the appropriation of Hole Farm in this way. Case law directed acquiring authorities, such as the Applicant, to look to any suitable land within its ownership before seeking to acquire any third party land compulsorily (Brown v Secretary of State for the Environment (1978) P. & C.R. 285, which was approved in Evelyn de Rothschild v Secretary of State for Transport [1989] 1 All E.R. 933). Brown held the following in relation to compulsory acquisition [paragraph 291]:
- “It must also, it seems to me, be a matter of supreme importance, in considering whether or not to confirm a compulsory purchase order, that not only is there another suitable site available but that that very site happens to be in the ownership of the authority that is seeking to exercise compulsory purchase powers... If, in fact, the acquiring authority is itself in possession of other suitable land – other land that is wholly suitable for that purpose – then it seems to me that no reasonable Secretary of State faced with that fact could come to the conclusion that it was necessary for the authority to acquire other land compulsorily for precisely the same purpose”*
- 7.1.11 Accordingly, TH explained that it is the Applicant’s firm position that to appropriate suitable land in its ownership is the correct approach as a matter of law. Moreover, the principle is supported by *Planning Act 2008: guidance related to procedures for the compulsory acquisition of land* (2013) in the context of section 131 of the Planning Act 2008, at paragraph 11(iii):
- “[replacement land acquisition] may arise, for example, where land which forms*

part of an open space or common is to be lost to the scheme, but the applicant does not hold other land in the area which may be suitable to offer in exchange." (Our emphasis)

- 7.1.12 TH added that there are potentially adverse ramifications of a finding that an applicant cannot rely on a compensatory proposal that the applicant benevolently commits to deliver, irrespective of whether it gets consent for the project to which the compensation relates. This would essentially lead a developer to hold back the benevolent proposal, and not bring it (and any advance habitat creation) forward pending a decision on the DCO application. The Applicant's position is that this would be contrary to the public interest.
- 7.1.13 In response to the ExA's questions, TH noted that if the DCO proposal were to fall away, then all of the commitments, including the oLEMP [[REP4-140](#)] commitments, would fall away and it would be open for Forestry England as tenants of the site, to bring proposals forward in a different form or develop the woodland in a different way, without the DCO commitments related to the site, such as the nitrogen deposition compensation. TH further clarified in response to the ExA, that the Applicant has not double-secured the oLEMP under the TCPA. If the DCO Project does go ahead, TH noted that it would be a matter for the Applicant and Forestry England to agree as part of their lease agreement to observe the commitments of the oLEMP.
- 7.1.14 TH explained that the Applicant considers the community woodland proposal and habitat creation objectives at Hole Farm to be compatible, and is working with NE and Forestry England to develop the woodland in a way that maximises both the recreational opportunities, while balancing the need to maintain the habitats being created. TH noted that it is recognised by all parties that allowing public access to nature is a positive thing, as it builds understanding and support for nature, providing the site is appropriately managed, which the oLEMP [[REP4-140](#)] would secure.
- 7.1.15 **Post-hearing written submissions:** These are contained with Annex E and include:
- a. Section E.2: Hearing Action Point 24: Hole Farm

8 ExA Questions on: Water Framework Directive

8.1 Item 8a) Culverting and Water Framework Directive (WFD)

Item 8(a)(i)

Item 8(a)(i): Culverts are proposed. The ExA wishes to explore the degree to which the length and design of these will adequately respond to the maintained or improved natural systems and biodiversity function of the affected watercourses. • The Environment Agency (EA) has stated that it has “a formal policy against culverting of any watercourse because of the adverse ecological, flood risk, geomorphological, human safety and aesthetic impacts”. [REP1-255] • EA has suggested that the proposed culverting could damage the prospect of some water bodies obtaining the appropriate status under the WFD and be contrary to Thames River Basin Management Plan (RBMP) objectives.

The ExA seeks confirmation from the EA that this continues to be their position and seeks input to inform a recommendation on this point to the Secretary of State, should it remain in dispute between the Applicant and the EA. • What specific WFD and RBMP objectives and progress would be impeded by the culvert designs that are currently proposed?

Whether any design amendments to culverting can be developed to address these concerns and; if not • What justification does that Applicant advance for the retention of its current design approach to culverting?

- 8.1.1 LD explained that the Applicant has sought to avoid culverting through design. The Mardyke and its tributaries the Golden Bridge and Orsett Fen Sewers would be spanned by viaduct, and this viaduct also avoids culverting some ordinary watercourses in that location.
- 8.1.2 LD explained that the West Mardyke Tributary is currently crossed by a highway structure (bridge) at the M25 and the Project proposes a 10m extension to the existing structure, with the dimensions of the structure matching the existing structure, as agreed with the Environment Agency. LD added that the Applicant is also proposing to introduce a new structure (20m wide, with other dimensions matching the existing).
- 8.1.3 Where a watercourse needs to be crossed and this can't be done by a clear span, LD noted that the Applicant has looked at the potential for culverting versus watercourse diversion, and where a long watercourse diversion would be needed to avoid a culvert, the Applicant's preference is for a culvert that is as short as it practically can be, and can avoid the potential for transfers of flows into and out of hydrological catchments that may occur, associated with long diversions. LD added that this also makes it easier to retain existing channel gradients, which is key to maintaining the system flow and sediment transport regimes. In summary, LD explained that the Project proposes two new culverts on main rivers, both on the West Tilbury Main watercourse. The Applicant is proposing a new box culvert which is 2.5 metres high by 4 metres wide, stretching 46 metres long. There is also an existing one-metre diameter

culvert that the Project would replace by a box culvert of those larger dimensions. LD added that with regard to other watercourses, there are a total of eight culverts on ordinary watercourses that are proposed by the Applicant.

- 8.1.4 LD explained that the Project is located in the Essex South management catchment, which is part of the Thames River Basin district. LD noted that the overarching objective for freshwater bodies within the Thames RBMP is no deterioration from their existing status, with the RBMP citing that improvement to good status has disproportionate burdens and/or no known technical solutions to improving these statuses, noting that the Applicant's aim reflects this.
- 8.1.5 LD explained that the WFD Assessment [[APP-478](#)] has assessed the effects of culverting on biological quality, which includes fish, macrophytes and macroinvertebrates, hydromorphology, which includes aspects such as flow and sediment transport, and physio-chemical quality. LD added that Tables 4.1, 4.2 and 4.3 within that report take each of those quality elements and assess effects of culverting on them, noting that the assessment concludes that there is a negligible risk of deterioration at the waterbody scale. LD noted that the conclusions drawn are in consideration of the culvert design proposals secured within the REAC [[REP5-048](#)]. LD highlighted that the commitments include RDWE013, which is a commitment to ensure that culverts have inverts buried below existing bed levels to maintain existing hydromorphological characteristics. LD added that the Applicant has a number of commitments in the REAC which are specific to the West Tilbury main culvert and all of these have been put in place with the aim of reducing any potential barrier effects to movements of fish and eels.
- 8.1.6 In terms of further amendments to the current design, LD confirmed that the Applicant's position is that no further amendments to the culvert designs currently proposed are practicable. LD explained, however, that there are several compensatory improvements on the West Tilbury Main watercourse, which include the removal of two existing culverts on the watercourse and restoring to open channel, as secured by RDWE046. LD added that there is also a commitment to reinstate a reach of channel on the West Tilbury Main watercourse which is currently dry and not functioning due to a blockage in a culvert. LD explained that this would give back approximately 125m of open channel reach on that water body, which is secured by RDWE047. LD noted that while this would mean losing 46m to a new culvert on the West Tilbury Main, this 46m represents less than 2% of the watercourse as a whole and the Project would be restoring approximately 150m of open channel on that watercourse.
- 8.1.7 In response to the ExA's queries, LD confirmed that the Applicant will respond as part of the ExA's WQs in respect of the details regarding the loss of specific meterages to new culvert as against the reinstatement of former culvert.
- 8.1.8 LD explained that the Applicant has participated in detailed engagement with the EA to inform the current design approach to culverting, including a "Choosing By Advantage Workshop" which was held to inform the design of the West Tilbury Main culvert, in which the EA participated. LD explained that the parties have worked collaboratively to explore design alternatives, including pumping, a divided watercourse, an open channel via a long diversion and an

open span crossing, which is detailed in the EA SoCG [[REP5-034](#)]. LD added that the outcome of that workshop was that agreement was reached that the current design represents the least damaging option and that there are no more favourable options available to crossing the West Tilbury Main watercourse. Since the workshop, the design of the Project has been refined and the culvert length has further reduced to the current 46m.

- 8.1.9 In response to TC's submissions, AT confirmed that there is a specific REAC commitment on mammal passages in culverts, which is RDWE044 [[REP5-048](#)], and provides that culverts would incorporate ledges or underpasses to ensure continued passage of mammals. In relation to the EA's comment, AT confirmed that the Applicant welcomes the confirmation that they are comfortable in the overall design of the Project to recognise the overall increase in freshwater habitat. The Applicant is also aware of the EA policy position that applies across the board, but notes that, as acknowledged in the SoCG [[REP5-034](#)] at item 2.1.30, the current design is the least damaging option and there are no better options available to cross the West Tilbury Main watercourse.
- 8.1.10 **Post-hearing written submissions:** These are contained within Annex F and include:
- a. Section F.2: Hearing Action Point 25: Culverts – Mammal ledges

9 Next Steps and Closing

9.1.1 The Applicant did not make any submissions under this agenda item.

References

- British Standards Institution (2012). BS 5837:2012 Trees in relation to design, demolition and construction. <https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations?version=standard>
- Chartered Institute of Ecology & Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. 2nd edition. Winchester: CIEEM.
- Chartered Institute of Ecology & Environmental Management (CIEEM) (various). Good Practice Guidelines (various).
- CIRIA (2003) Habitat translocation – a best practice guide (C600). <https://www.thenbs.com/PublicationIndex/documents/details?Pub=CIRIA&DocID=264131>
- English Nature (2006). Guidance on understanding and managing soils for habitat restoration projects (Research Report No. 712). <https://publications.naturalengland.org.uk/publication/61016>
- Highways England (2020a). Design Manual for Roads and Bridges: LA 105 Air Quality. 10191621-07df-44a3-892e-c1d5c7a28d90 (standardsforhighways.co.uk)
- Highways England (2020b). Design Manual for Roads and Bridges LA 108 Terrestrial biodiversity. <https://www.standardsforhighways.co.uk/search/af0517ba-14d2-4a52-aa6d-1b21ba05b465>
- HS2 Learning Legacy (2022). Ancient woodland soils translocation. <https://learninglegacy.hs2.org.uk/document/ancient-woodland-soils-translocation/>
- Joint Nature Conservation Committee (2004) Common Standards Monitoring Guidance for Woodland Habitats. <https://hub.jncc.gov.uk/assets/6df1057b-5357-400b-a363-c8748298180a>
- Kent County Council (2022). Shorne Woods Country Park Management Plan 2021-26. https://www.kent.gov.uk/__data/assets/pdf_file/0003/61167/Shorne-Woods-Country-Park-Management-Plan.pdf

Glossary

Term	Abbreviation	Explanation
A122		The new A122 trunk road to be constructed as part of the Lower Thames Crossing project, including links, as defined in Part 2, Schedule 5 (Classification of Roads) in the draft DCO (Application Document 3.1)
A122 Lower Thames Crossing	Project	A proposed new crossing of the Thames Estuary linking the county of Kent with the county of Essex, at or east of the existing Dartford Crossing.
A122 Lower Thames Crossing/M25 junction		New junction with north-facing slip roads on the M25 between M25 junctions 29 and 30, near North Ockendon.
A13/A1089/A122 Lower Thames Crossing junction		Alteration of the existing junction between the A13 and the A1089, and construction of a new junction between the A122 Lower Thames Crossing and the A13 and A1089, comprising the following link roads: <ul style="list-style-type: none"> • Improved A13 westbound to A122 Lower Thames Crossing southbound • Improved A13 westbound to A122 Lower Thames Crossing northbound • Improved A13 westbound to A1089 southbound • A122 Lower Thames Crossing southbound to improved A13 eastbound and Orsett Cock roundabout • A122 Lower Thames Crossing northbound to improved A13 eastbound and Orsett Cock roundabout • Orsett Cock roundabout to the improved A13 westbound • Improved A13 eastbound to Orsett Cock roundabout • Improved A1089 northbound to A122 Lower Thames Crossing northbound • Improved A1089 northbound to A122 Lower Thames Crossing southbound
A2		A major road in south-east England, connecting London with the English Channel port of Dover in Kent.
Application Document		In the context of the Project, a document submitted to the Planning Inspectorate as part of the application for development consent.
Construction		Activity on and/or offsite required to implement the Project. The construction phase is considered to commence with the first activity on site (e.g. creation of site access), and ends with demobilisation.
Design Manual for Roads and Bridges	DMRB	A comprehensive manual containing requirements, advice and other published documents relating to works on motorway and all-purpose trunk roads for which one of the Overseeing Organisations (National Highways, Transport Scotland, the Welsh Government or the Department for Regional Development (Northern Ireland)) is highway authority. For the A122 Lower Thames Crossing the Overseeing Organisation is National Highways.
Development Consent Order	DCO	Means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects (NSIP) under the Planning Act 2008.

Term	Abbreviation	Explanation
Development Consent Order application	DCO application	The Project Application Documents, collectively known as the ‘DCO application’.
Environmental Statement	ES	A document produced to support an application for development consent that is subject to Environmental Impact Assessment (EIA), which sets out the likely impacts on the environment arising from the proposed development.
M2 junction 1		The M2 will be widened from three lanes to four in both directions through M2 junction 1.
M2/A2/Lower Thames Crossing junction		New junction proposed as part of the Project to the east of Gravesend between the A2 and the new A122 Lower Thames Crossing with connections to the M2.
M25 junction 29		Improvement works to M25 junction 29 and to the M25 north of junction 29. The M25 through junction 29 will be widened from three lanes to four in both directions with hard shoulders.
National Highways		A UK government-owned company with responsibility for managing the motorways and major roads in England. Formerly known as Highways England.
National Policy Statement	NPS	Set out UK government policy on different types of national infrastructure development, including energy, transport, water and waste. There are 12 NPS, providing the framework within which Examining Authorities make their recommendations to the Secretary of State.
National Policy Statement for National Networks	NPSNN	Sets out the need for, and Government’s policies to deliver, development of Nationally Significant Infrastructure Projects (NSIPs) on the national road and rail networks in England. It provides planning guidance for promoters of NSIPs on the road and rail networks, and the basis for the examination by the Examining Authority and decisions by the Secretary of State.
Nationally Significant Infrastructure Project	NSIP	Major infrastructure developments in England and Wales, such as proposals for power plants, large renewable energy projects, new airports and airport extensions, major road projects etc that require a development consent under the Planning Act 2008.
North Portal		The North Portal (northern tunnel entrance) would be located to the west of East Tilbury. Emergency access and vehicle turn-around facilities would be provided at the tunnel portal. The tunnel portal structures would accommodate service buildings for control operations, mechanical and electrical equipment, drainage and maintenance operations.
Operation		Describes the operational phase of a completed development and is considered to commence at the end of the construction phase, after demobilisation.
Order Limits		The outermost extent of the Project, indicated on the Plans by a red line. This is the Limit of Land to be Acquired or Used (LLAU) by the Project. This is the area in which the DCO would apply.
Planning Act 2008		The primary legislation that establishes the legal framework for applying for, examining and determining Development Consent Order applications for Nationally Significant Infrastructure Projects.

Term	Abbreviation	Explanation
Project road		The new A122 trunk road, the improved A2 trunk road, and the improved M25 and M2 special roads, as defined in Parts 1 and 2, Schedule 5 (Classification of Roads) in the draft DCO (Application Document 3.1).
Project route		The horizontal and vertical alignment taken by the Project road.
South Portal		The South Portal of the Project (southern tunnel entrance) would be located to the south-east of the village of Chalk. Emergency access and vehicle turn-around facilities would be provided at the tunnel portal. The tunnel portal structures would accommodate service buildings for control operations, mechanical and electrical equipment, drainage and maintenance operations.
The tunnel		Proposed 4.25km (2.5 miles) road tunnel beneath the River Thames, comprising two bores, one for northbound traffic and one for southbound traffic. Cross-passages connecting each bore would be provided for emergency incident response and tunnel user evacuation. Tunnel portal structures would accommodate service buildings for control operations, mechanical and electrical equipment, drainage and maintenance operations. Emergency access and vehicle turn-around facilities would also be provided at the tunnel portals.

Annexes

Annex A Post-hearing submissions on Agenda Item 3 Ancient Woodland Impact

A.1 Introduction

- A.1.1 This section provides the post-hearing submissions for agenda item 3 Ancient Woodland Impact, from Issue Specific Hearing 9 (ISH9) on 23 October 2023 for the A122 Lower Thames Crossing (the Project).

A.2 Hearing Action Point 2: OLEMP Definitions

- A.2.1 Hearing Action Point 2 Requests “*Provide an explanation for the practical implications of the use of the words “in perpetuity” and “long term management” in the OLEMP. Is further clarification/definition required to be added to the OLEMP to provide sufficient certainty?*” The Applicant’s response is below.
- A.2.2 The Applicant has undertaken a review of the oLEMP having regard to the use of, and context for, the phrase “long term”. The oLEMP contains a range of commitments relating to habitat establishment, monitoring, oversight arrangements and ongoing management. As a result, responding to the “in perpetuity” comments from Natural England requires more than a simple update to the oLEMP, which in turn requires additional time to address and implement. Accordingly, the Applicant will respond to this matter in full, including any necessary updates to the oLEMP, at Deadline 7.

A.3 Hearing Action Point 3: OLEMP Definitions

- A.3.1 Hearing Action Point 3 requests: “*Applicant to provide explanation of use of the phrase “where practicable” in the OLEMP and any measures for consultation. Are there specific measures for control in respect of storage and translocation of soils to be approved, and if so what controls?*” The Applicant’s response is below.
- A.3.2 The Applicant has undertaken a review of the oLEMP regarding the use of the phrase “where practicable” in terms of utilising existing soil resource from Ancient Woodland areas directly affected by the Project.
- A.3.3 Additional text relating to the assessment of the suitability of soil materials for salvage and reuse, with examples of criteria which will be used to define “where practicable”, will be provided by the Applicant as part of an update to the oLEMP submitted at Deadline 7.
- A.3.4 It should be noted that the watching brief (as committed to in GS028 in the REAC) may identify previously unknown contamination; any changes to the approach as a result would be presented to and discussed with the oLEMP

Advisory Group. In addition, as set out in commitment GS006 within the REAC, suitability for reuse will be confirmed for all materials.

A.4 Hearing Action Point 4: Ancient Woodland loss/compensation

- A.4.1 Hearing Action Point 4 requests: “*Provide an Examination Library plan reference which shows the areas of ancient woodland to be lost and by direct reference the areas of compensation to be provided. If there is no such plan in the document set, please provide one.*” The Applicant’s response is below.
- A.4.2 Environmental Statement (ES) Figure 8.33: Ancient woodland impacts [[APP-294](#)] shows areas of designated ancient woodland, those impacted by the Project, and where ancient woodland compensation planting is proposed within the Project Order Limits.
- A.4.3 Figure 1: Designated sites within 200m of the Affected Roads Network and Figure 2: Designated sites affected by nitrogen deposition (page 1-4) show designated sites, including ancient woodland, considered as part of ES Appendix 8.14: Designated sites air quality assessment [[APP-403](#) and [APP-404](#)].
- A.4.4 In response to Kent Downs AONB Unit’s ISH9 comments on the appropriateness of the proposed Ancient Woodland compensation planting north of Park Pale (east of Shorne Woods Country Park), it is noted that a similar comment was made in their Written Representation (WR) [[REP1-378](#)], where concern was expressed that proposed planting does not reflect landscape character. However, the Applicant has provided a response to this issue on page 61 of their Comments on WRs Appendix A: Statutory Environmental Bodies [[REP2-046](#)]. The Applicant has also subsequently provided a new photomontage from Representative Viewpoint S-03, which illustrates the proposed Ancient Woodland compensation planting in their ES Figure 7.19 Photomontages – Winter Year 1 and Summer Year 15 (1 of 4) v3.0 [[REP5-046](#)].

A.5 Hearing Action Point 5: Soil Management

- A.5.1 Hearing Action Point 5 requests: “*If the Applicant intends to rely upon a method similar to that used in respect of HS2 to target the translocation of soils from ancient woodland to compensation sites (“the translocation grid”), please submit an outline version into the Examination. Please explain the process and timing by which a detailed version will be consulted upon, approved and secured.*” The Applicant’s response is below.

- A.5.2 The Applicant will set out a more detailed approach to soil, coppiced stool and deadwood salvage and re-use as part of the update to the oLEMP at Deadline 7. This will specifically relate to Section 8.23 of the oLEMP.

A.6 Hearing Action Point 6: Utilities Plan

- A.6.1 Hearing action point 6 requests: “*Provide a plan overlaying the extent of the ancient woodland proposed to be removed onto the location of the proposed utility diversions.*” The Applicant’s response is below.
- A.6.2 The Applicant has produced a new drawing showing Kent Downs Area of Outstanding Natural Beauty and Ancient Woodland in Shorne Woods Country Park area and this is shown in Kent Downs AONB and Utilities Works [Document Reference 9.157].
- A.6.3 The Applicant recognises that other Ancient Woodland areas are impacted by the proposed utilities works and this will be submitted at D7.

A.7 Hearing Action Point 7: Ancient Woodland and Utility Alignments

- A.7.1 Hearing action point 7 requests: “*Further to action 6, please explain whether the extent of ancient woodland removal adjacent to the A2 at Brewers Road is still justified in circumstances where the utility alignment follows that of the slip roads.*” The Applicant’s response is below
- A.7.2 The Applicant wishes to clarify that the works, Work No G1a, at Brewers Road heading east, are proposed within the boundary of the local highways, Brewers Road and Park Pale rather than within the A2 slip roads.
- A.7.3 As per paragraph 2.7.24 of the ES Chapter 2: Project Description [[APP-140](#)] ‘*Construction methodologies and working areas have been developed reflecting the LOD set out in the draft DCO (Application Document 3.1) and the Works Plans (Application Document 2.6)*’. These types of works require temporary traffic management to separate traffic from the working area (further details are available at para 2.7.106 through 2.7.108 of that same document). As such, working area is required either side of the highway to accommodate the detailed design and safe delivery of the construction proposals for the Project.
- A.7.4 Working areas associated with Work No G1a, which is the installation of an 800mm medium pressure gas pipeline (as shown on sheets 3 and 4 of the Works Plans [[REP4-038](#)]) is shown either side of the highway (Brewers Road and Park Pale) in accordance with the current stage of design.

- A.7.5 It is of note that these works and their potential impacts cannot be limited to the carriageway owing to the nature of the works that will be undertaken, the type of plant that will be required to complete it and the need to retain a safe segregation between the workforce and passing traffic. Therefore, the Applicant has assessed the reasonable worst case impacts associated with the works being carried out within either lane of Brewers Road or Park Pale Lane. In accordance with REAC item LV001 [[REP5-048](#)] and Design Principle LSP.01 [[REP4-146](#)] the Applicant shall limit the impact to the existing vegetation so far as reasonably practicable at the detailed design stage, which the Applicant assumes would contain all of these works to within the fence lines that currently separate the highways and the woodland, as seen at Plate A.1 below.

Plate A.1 Park Pale carriageway and fences, looking west



- A.7.6 At Deadline 7 the Applicant is proposing the submission of further plans showing the proposed utility working areas where they impact ancient woodland throughout the Project (as per A.6.3 above).

A.8 Hearing Action Point 8: Candidate Veteran Trees – Shorne Woods Country Park

- A.8.1 Hearing action point 8 requests that: “*Consider the potential re-alignment of the proposed footpath to avoid/reduce the impact on the candidate veteran trees adjacent to Shorne Woods Country Park (as indicated on the plan in REP4-084).*” The Applicant’s response is below.

- A.8.2 In light of the discussions during Issue Specific Hearing 9, the Applicant has been giving detailed consideration to a design solution that would avoid impact to the trees at this location. The detail has yet to be confirmed but the Applicant anticipates being able to provide a clear response at Deadline 7.

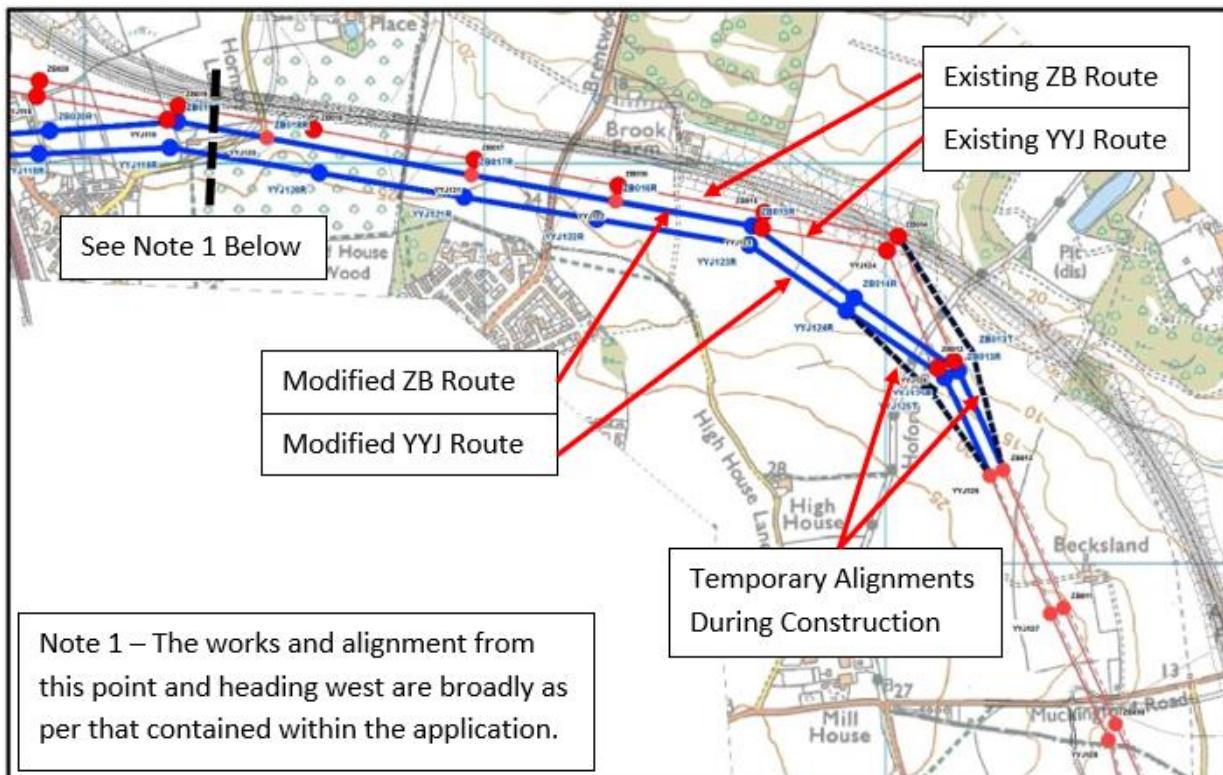
A.9 Hearing Action Point 10: Overhead Power Line – Chadwell St Mary (Response on effect of moving utilities alignment at Rainbow Shaw in relation to Ancient Woodland)

- A.9.1 The Examining Authority's hearing action 10 states: "*A sketch plan (Annex A) shows the location of existing transmission alignments and towers between Chadwell St Mary and the ancient woodland at Rainbow Shaw. The ExA seeks to understand the implications for the transmission alignments of measures to safeguard the ancient woodland by facilitating a movement of the LTC alignment to the south. With reference to the sketch plan, the Applicant is requested to confirm:*
- a. How far southwards would transmission towers at location A need to be moved?*
 - b. What would be the implications of the movement for the alignments 'upstream' in direction B? How many pairs of towers would need to be replaced or substantially re-engineered to give effect to the movement?*
 - c. What would be the implications of the movement for the alignments 'downstream' in direction C? How many pairs of towers would need to be replaced or substantially re-engineered to give effect to the movement?*
- Once the nature of the necessary changes to the alignments has been explained, please then clarify how the costs and effects of those changes were deemed to justify the loss of ancient woodland.”*
- A.9.2 At Statutory Consultation 2018, the design of the road alignment and associated Hanford Road embankments (as they were at that time) required the removal of approximately 0.6 hectares of Rainbow Shaw Local Wildlife Site (which has been assessed as ancient semi-natural woodland as a result of field survey findings). The design within the application requires the removal of 1.2 hectares of that same woodland. The increased impact is associated with the realignment of the A122.
- A.9.3 As set out in ES Chapter 3 [[APP-141](#)] the alignment of the A122 was moved at 2020 Supplementary Consultation to mitigate impacts on the overhead transmission powerline networks (the 400kV YYJ Route and the 275kV ZB Route).

- A.9.4 The Project design proposals were reviewed (between 2018 and 2020) following feedback received from National Grid (NGET) and Thurrock Council at the 2018 Statutory Consultation who jointly expressed concern regarding the extent of the works required, the requirement for additional pylons to be built, and the proposal to move the YYJ Route and associated working areas approximately 50 metres closer to the residents of Chadwell St Mary for a length of approximately 2km (the current overhead powerline separation is approximately 120 metres, and this land is under option for housing development). NGET expressed a further concern regarding the conductors oversailing a residential property, Rose Cottage, located on Hornsby Lane.
- A.9.5 In response to ISH9 action point 10 [[EV-075](#)], the two pylons annotated at 'A' (YYJ124 and ZB014) would require the construction of two new replacement pylons approximately 200m south-west of their current position (ZB014R, YYJ124R) as shown on Plate A.2 below. This would have modified the alignment of the pylons, compared to that contained within the application, for approximately 1.8km heading west (direction B), requiring 5 new pylons to be constructed (ZB015R, YYJ120R, YYJ121R, YYJ122R, YYJ123R) and approximately 0.62km heading south easterly (direction C) requiring an additional 2 pylons to be constructed (ZB013R, YYJ125R). To facilitate these works 2 temporary pylons would have to be constructed (ZB013T, YYJ125T) and 9 existing pylons would have to be dismantled (ZB013, ZB014, ZB015, ZB016, ZB017, ZB018, YYJ123, YYJ124, YYJ125).
- A.9.6 The design change to limit the extent of the works to the YYJ Route and ZB Route was made following engagement with NGET, Thurrock Council and a design review, as communicated within ES Chapter 3 [[APP-141](#)] (paragraph 3.28.24), and was consulted on within the 2020 Supplementary Consultation. This design change involved moving the road alignment further north into Rainbow Shaw Wood and is the alignment now contained in the DCO application. This avoided the need to move the alignment closer to the residents of Chadwell St Mary.
- A.9.7 The ability to limit the works to those overhead powerline routes is determined by the ability to avoid the 30m safety exclusion zones and operation and maintenance zones around existing pylons YYJ124 and ZB014 (as shown on sheet 27 of the Works Plans [[REP5-020](#)]) and annotated at Plate A.2 below, which the proposed highway alignment achieves.
- A.9.8 At Statutory Consultation in 2018, the road alignment passed within those zones, and directly through pylon ZB014. A conceptual design of the modifications required to the network heading west, if the highway had not been moved north-east (as per the application), can be seen at Plate A.2 below (those works continue around the A13/A1089/A122 junction as per Work No OH6 and OH7 contained within the application). This conceptual design was the

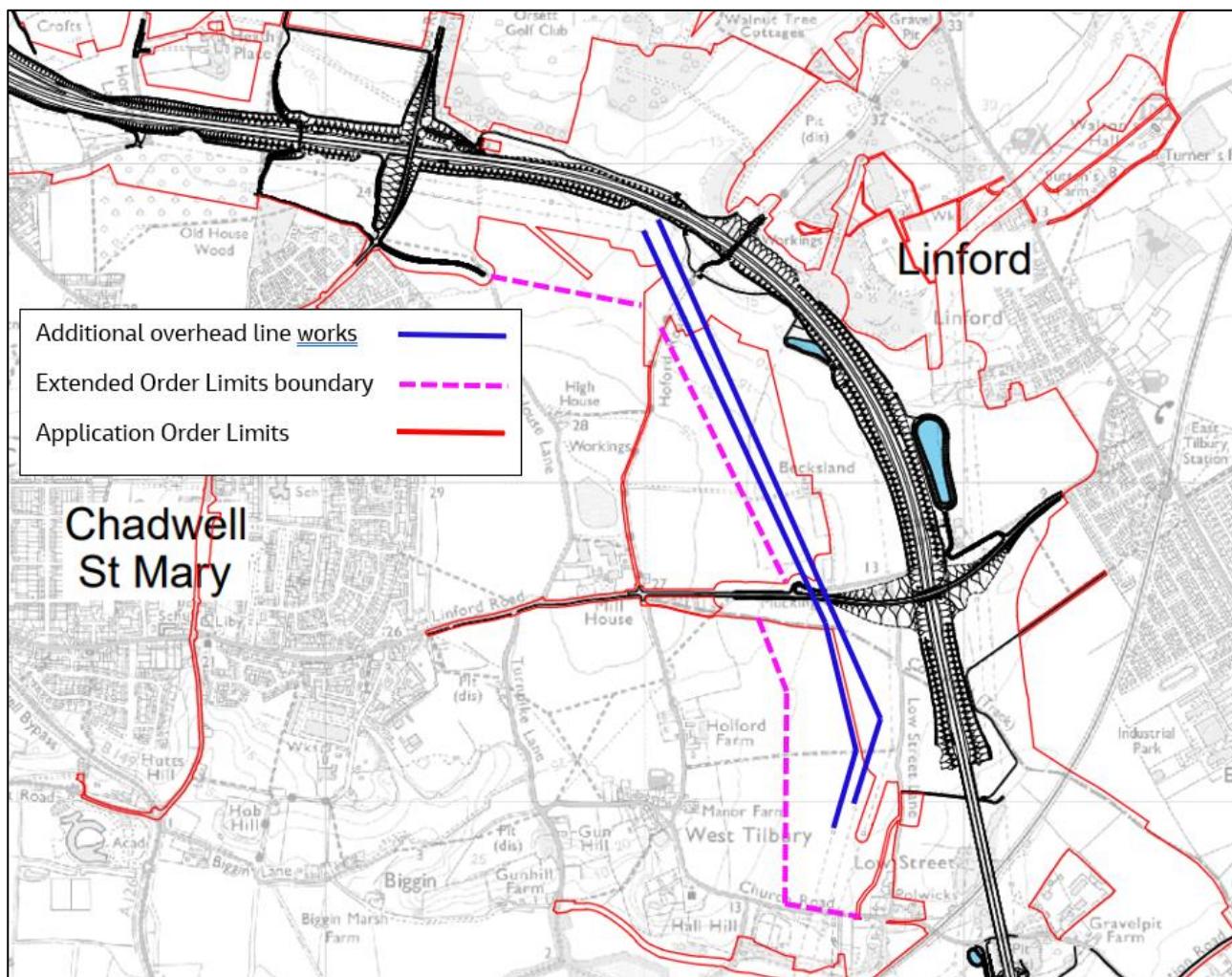
alignment consulted upon at statutory consultation. A representational viewpoint of the proposed view from Brentwood Road looking north-west towards the Lower Thames Crossing/A13 junction, showing the realigned pylons, is contained within the Consultation Report: Appendix M, page 113 [[APP-082](#)].

Plate A.2 2018 Conceptual design for realignment works to the YYJ Routes and ZB Routes



- A.9.9 Owing to the type of works that can be completed on different pylon types, the works would have extended south along the YYJ Route and ZB Route by approximately 1.6km compared to that contained within the application to pylons YYJ130 and ZB008 (which can be seen immediately west of pylon PAB11 on sheet 23 of the Works Plans [[REP5-020](#)]). The Order Limits would have had to be increased by approximately 40 hectares (subject to Compulsory Acquisition and Temporary Possession powers) to complete these works.
- A.9.10 Indicative extents of these works and the associated Order Limit boundary extension (as was communicated at 2018 Statutory Consultation) can be seen at Plate A.3 below.

Plate A.3 Indicative extents of additional overhead powerline works and associated Order Limit boundary extension



- A.9.11 This would have resulted in the additional installation of conductors, insulators and fittings between pylons YYJ124, YYJ125, YYJ126, YYJ127, YYJ128 and YYJ129 (approximately 1740m) and earthing works on existing pylon YYJ130 as part of Work No OH6.
- A.9.12 This would have resulted in the additional installation of conductors, insulators and fittings between pylons ZB009, ZB010, ZB011, ZB012, ZB013 and ZB014 (approximately 1710m) and earthing works on existing pylon ZB015 as part of Work No OH7.
- A.9.13 The Applicant understood in 2020 that these additional works may have presented a significant risk to the delivery programme of the Project due to constraints on the electricity networks nationally, and specific local constraints regarding the obtaining of outages to move the networks repeatedly through multiple temporary alignments for the full extent of Work's OH6 and OH7.
- A.9.14 The Applicant estimates that these additional works would have cost in the range of approximately £15–20 million to complete.

A.9.15 In summary, the Applicant's position is that the impacts to Rainbow Shaw Local Wildlife Site contained within the application (an additional 0.6 hectares of ancient woodland loss compared to the statutory consultation design) when balanced against the perceived additional impacts to landowners and residents, the prolonged construction programme, additional costs and proposals that were resisted by both the network owner NGET and the local authority Thurrock Council, are justified, necessary and proportionate.

A.10 Provide Environmental Masterplan reference numbers

- A.10.1 The reference numbers to the Environmental Master plan are below.
- a. Deadline 4 Submission - 6.2 Environmental Statement Figure 2.4 - Environmental Masterplan Sections 1 and 1A (1 of 10) [[REP4-124](#)]
 - b. Deadline 3 Submission - Other: 6.2 Environmental Statement Figure 2.4 - Environmental Masterplan Section 2 (2 of 10) v3.0 [[REP3-098](#)]
 - c. Deadline 2 Submission - 6.2 Environmental Statement Figure 2.4 - Environmental Masterplan Section 3 (3 of 10) [[REP2-018](#)]
 - d. 6.2 Environmental Statement - Figure 2.4 - Environmental Masterplan Section 4 (4 of 10) [[APP-162](#)]
 - e. Deadline 4 Submission - 6.2 Environmental Statement Figure 2.4 - Environmental Masterplan Section 9 (5 of 10) v4.0 [[REP4-127](#)]
 - f. Deadline 4 Submission - 6.2 Environmental Statement Figure 2.4 - Environmental Masterplan Section 10 (6 of 10) v3.0 [[REP4-129](#)]
 - g. Deadline 2 Submission - 6.2 Environmental Statement Figure 2.4 - Environmental Masterplan Section 11 (7 of 10) v2.0 [[REP2-024](#)]
 - h. Deadline 2 Submission - 6.2 Environmental Statement Figure 2.4 - Environmental Masterplan Section 12 (8 of 10) [[REP2-026](#)]
 - i. Deadline 2 Submission - 6.2 Environmental Statement Figure 2.4 - Environmental Masterplan Section 13 (9 of 10) [[REP2-028](#)]
 - j. Deadline 2 Submission - 6.2 Environmental Statement Figure 2.4 - Environmental Masterplan Section 14 (10 of 10) [[REP2-031](#)]

Annex B Post-hearing submissions on Agenda Item 4 The Wilderness

B.1 Introduction

- B.1.1 This section provides the post-hearing submissions for agenda item 4 The Wilderness, from Issue Specific Hearing 9 (ISH9) on 23 October 2023 for the A122 Lower Thames Crossing (the Project).

B.2 Hearing Action Point 12: The Wilderness – Status (Ancient Woodland)

- B.2.1 Hearing action point 12 requests: “*Provide a ‘without prejudice’ case setting out the Applicant’s position in the event that ‘The Wilderness’ is designated as ancient woodland.*” The Applicant’s response is below.
- B.2.2 For avoidance of doubt, the Applicant is not aware of any evidence that would suggest that there is potential for The Wilderness to be considered ancient woodland. To the contrary, desk-based information sources and data collected during the Applicant’s field surveys indicate that The Wilderness does not meet the ancient woodland criteria.
- B.2.3 Notwithstanding the known status of The Wilderness as outlined above, this section presents a without prejudice assessment of the likely significant effect of the Project on The Wilderness woodland on the theoretical basis that the area meets the criteria required to designate it as Ancient Semi-Natural Woodland (ASNW)¹. This assessment is in line with the methodology set out in ES Chapter 8: Terrestrial Biodiversity [[APP-146](#)], Section 8.3 Assessment methodology.
- B.2.4 As a designated area of ancient semi-natural woodland, The Wilderness would be included in Section 8.4 Baseline conditions as a non-statutory site under Table 8.20. The headings from this table and the information relevant to The Wilderness are presented below:

¹ The National Planning Policy Framework (updated 2023) defines ancient woodland as “*an area that has been wooded continuously since at least 1600AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites (PAWS).*”

Table 8.20 Non-statutory designated sites within the study area north of the River Thames

Designated site	Interest features, citation lists and reasons for designation	Level of importance ²	Approximate distance from Order Limits
The Wilderness ASNW	Ancient woodland	National	0m (within Order Limits)

- B.2.5 The approach to offsetting impacts to ancient woodland, developed following discussions with Natural England and, to a lesser extent, Forestry England, is to provide ancient woodland compensation planting which delivers two overarching principles:
- a. To create new areas of high quality woodland which, from a National Vegetation Classification perspective, align with the classifications of the affected ancient woodlands.
 - b. To position the new areas of ancient woodland compensation planting to extend and buffer existing retained woodlands and establish new, strong links between these retained woodlands to develop and build greater resilience into a coherent ecological network of habitats across the wider landscape. This principle aligns with guidance on Ecological Impact Assessment (CIEEM, 2018), which states that compensation should be provided as close as possible to the location where effects have occurred and benefit the same habitats and species as those affected.
- B.2.6 Natural England state their support for this approach in their Statement of Common Ground with the Applicant at Item no. 2.1.64 [[REP5-038](#)]. The principle of creating new habitats to link existing habitats is also supported by the Forestry Commission in their Statement of Common Ground with the Applicant [[REP4-106](#)] at item 2.1.5, and in the Woodland Trust's written representation [[REP1-306](#)] at paragraph 11.10.
- B.2.7 In line with the baseline assessment of The Wilderness, as a theoretical ancient semi-natural woodland, being an area of non-statutory designation, it would be included within Table 8.33 in Section 8.6 Assessment of likely significant effects in ES Chapter 8: Terrestrial Biodiversity [[APP-146](#)].

² Defined following the guidance provided in ES Chapter 8: Terrestrial Biodiversity – Table 8.5 Biodiversity resource importance

Table 8.33 Construction effects on non-statutory designated sites north of the River Thames

Designated site	Impacts, mitigation and overall likely effects
The Wilderness ASNW	<p>Habitat loss (1.06ha representing 32% of the ASNW) due to the new A122 Lower Thames Crossing alignment conflicting with the southern section of the woodland. Given its status as ancient woodland, this habitat is considered to be irreplaceable. Habitat degradation due to possible pollution events and disturbance to badgers, bats and nesting birds present would be mitigated by the good practice mitigation identified in Section 8.5. This mitigation would include temporary fencing of retained habitats, translocation of protected species to suitable retained habitats and newly created receptor sites that can accommodate such species, and nesting bird checks carried out by an Ecological Clerk of Works. This mitigation would reduce the likely impacts such that the conservation status of the species associated with the designated site would be maintained.</p> <p>Compensatory woodland planting would be provided to compensate, in part, for the loss of this habitat. Ancient woodland compensation planting totalling 32ha is proposed north of the River Thames, focused principally on a 30ha area of planting at Hole Farm and Folkes Farm, either side of the M25 just north of junction 29. (see Environmental Masterplan Section 14 [REP2-031] and the Design Principles [REP4-146] Clause no. LSP.19, S14.13).</p> <p>However, the loss of ancient woodland, which is assessed to be of national importance, would be a permanent major adverse level of impact that would adversely affect the integrity of the site. This would result in an effect that is large adverse and significant.</p>

- B.2.8 Regarding the Plants and Habitats assessment which includes ancient woodland, Table 8.35 would be revised to consider the increase in the loss of ancient woodland habitat as a result of the theoretical designation of The Wilderness as ancient semi-natural woodland.

Table 8.35 Habitat losses and gains associated with the Project to the north of the River Thames

Existing habitat	Importance	Habitat loss	New semi-natural habitat	Habitat permanent gain	Net permanent gain (gain-loss) ³
Ancient woodland	National	2.63	Ancient woodland compensation planting (LE8.2)	32	29.37

- B.2.9 As The Wilderness does not hold any statutory or non-statutory designation, it was not included in the original assessment of effects of nitrogen deposition on designated sites as presented in ES Appendix 8.14: Designated Sites Air Quality Assessment [[APP-403](#); [APP-404](#); [APP-405](#); [APP-406](#)]. This is in line with the Design Manual for Roads and Bridges LA 105 Air Quality (Highways England, 2020a), and means there is no modelling data for changes in nitrogen

³ Not considered a net gain due to the irreplaceable nature of the habitat lost.

deposition at The Wilderness. However, should The Wilderness be considered a designated ancient semi-natural woodland then it would have been included as part of this assessment.

- B.2.10 Given no modelling data exists for this site, Codham Hall Wood Ancient Woodland has been used as a proxy for The Wilderness. Codham Hall Wood Ancient Woodland is considered an appropriate proxy for The Wilderness as it lies immediately adjacent to the Project Order Limits and would also result in the loss of an area of designated habitat as a result of the Project. The assessment of likely significant effect for Codham Hall Wood Ancient Woodland, presented in ES Appendix 8.14: Designated Sites Air Quality Assessment and summarised in ES Chapter 8 [[APP-146](#)] – Table 8.38 Designated habitats north of the River Thames – air quality impact summary, is that the designated site would experience a major adverse impact as a result of nitrogen deposition degrading the habitats present which would adversely affect the site's integrity. The effect of this would be large adverse and significant. These conclusions on the level of impact and effect of increased nitrogen deposition are therefore adopted at The Wilderness on a precautionary basis, should it be designated as an ancient woodland and therefore of national value. Table 8.38 would be revised to include The Wilderness.

Table 8.38 Designated habitats north of the River Thames – air quality impact summary

Designated site	Importance	Level of impact	Effect
The Wilderness ASNW	National	Major adverse	Large adverse Significant

- B.2.11 The strategy to compensate for adverse effects of nitrogen deposition on designated sites is presented in ES Appendix 5.6: Project Air Quality Action Plan [[APP-350](#)] and summarised in ES Chapter 8: Terrestrial Biodiversity [[APP-146](#)] paragraphs 8.6.492 – 8.6.493. The overarching objectives of this are to create a comparable area of wildlife-rich habitat as that being significantly affected by nitrogen deposition as a result of the Project. The creation of this habitat would be located to develop links between existing semi-natural habitat within the network of designated sites across the wider landscape (see the outline Landscape and Ecology Management Plan [[REP4-140](#)] Section 8.28, and the Design Principles [[REP4-146](#)] Clause no. LSP.27), building resilience in the ecological network supporting the nitrogen affected sites.
- B.2.12 The conclusion that The Wilderness, if designated ancient woodland, would be significantly affected by increased nitrogen deposition would therefore increase the overall extent of designated habitats affected by the Project by 2.27ha to 178.67ha. This figure is considered to be comparable to the extent of nitrogen

deposition compensation being provided by the Project to offset these adverse effects, which totals 205.8ha.

- B.2.13 The conclusions presented in ES Chapter 8: Terrestrial Biodiversity [APP-146] around operational affects from vehicle pollution and recreational pressures (paragraphs 8.6.494 – 8.6.496) consider the likely effects as being neutral and not significant. These are appropriate and relevant to The Wilderness.
- B.2.14 This without prejudice assessment of The Wilderness woodland on the theoretical basis that the area meets the criteria required to designate it as Ancient Semi-Natural Woodland concludes that the Project would lead to large adverse effects which are significant as a result of the loss of designated irreplaceable habitat, and the degradation of retained designated irreplaceable habitat as a result of increased nitrogen deposition. The summary Table 8.39 in ES Chapter 8: Terrestrial Biodiversity [APP-146] Section 8.9 Summary would be updated to include the following references.

Table 8.39 Terrestrial ecology impact summary table

Impact description	Importance	Level of impact	Effect	Significance
Construction				
Permanent habitat loss at The Wilderness ASNW totalling 1.06ha	National	Major	Large adverse	Significant
Operation				
Effects of nitrogen deposition on irreplaceable habitats: Four ⁴ ancient woodland sites	National	Moderate to major	Moderate to large adverse	Significant

- B.2.15 The measures proposed to provide ancient woodland compensation planting which create new, high quality habitats that extends and buffers existing, retained habitats and links to other similar habitats within the wider landscape have been developed without the inclusion of The Wilderness as a consideration. However, given the extent of this compensation planting and its design focus on a landscape-scale provision of habitat creation that develops strong coherent ecological networks, these proposals are still considered to achieve these objectives with the without prejudice inclusion of woodland loss at The Wilderness within the assessment of likely significant effects for ancient woodland.

⁴ Three ancient woodland sites specified in original assessment presented in ES Chapter 8: Terrestrial Biodiversity Table 8.39

B.3 Hearing Action Point 15: The Wilderness – Retaining Wall

- B.3.1 Hearing action point 15 requests: “*Please provide details of the additional commitments in respect of the construction of the proposed retaining wall structure within/ adjacent to ‘The Wilderness’.*” The Applicant’s response is below.
- B.3.2 The proposed new Design Principle, in relation to the retaining wall, and REAC commitment, to limit impacts from temporary utility diversion, to further reduce impacts to ‘The Wilderness’, to be submitted at Deadline 6, are as follows:
- B.3.3 Design Principle **S12.19** Retaining wall and watercourse diversion at ‘The Wilderness’ (Works Numbers 8A and 8V) – The earthworks, retaining wall and watercourse diversion in the vicinity of ‘The Wilderness’ shall be carefully coordinated and designed in such a way as to minimise the loss of vegetation and trees in ‘The Wilderness’ as far as reasonably practical.
- B.3.4 REAC commitment **LV034** – No woodland within ‘The Wilderness’ will be removed for the installation of Work No MUT27.
- B.3.5 As identified in ISH9 hearing, it is estimated that in combination these two measures would facilitate the retention of a further 4000m² of woodland within ‘The Wilderness’ when compared to the submitted outline design. With regard to the use of the phrase ‘where reasonably practical’ for the proposed new Design Principle S12.19, this is intended to ensure that works required would fall within the Limits of Deviation for the retaining wall design and subject to ground conditions associated with the realignment of the watercourse which may place constraints on its ability to minimise any losses.

B.4 Hearing Action Point 17: The Wilderness – Watercourses

- B.4.1 Hearing action point 17 requests: “*Provide details in relation to the management of the watercourses to retain existing water level operation, and the hydrological analysis used to determine the proposed watercourse works which would surround ‘The Wilderness’.*” The Applicant’s response is below:
- B.4.2 The watercourses at and neighbouring The Wilderness will be managed in accordance with the management requirements described in Paragraph 7.2.12 (part b) of the outline Landscape and Ecology Management Plan [[REP4-140](#)]. These requirements specify that waterbodies would be designed and managed to integrate into the surrounding landscape and not appear engineered.

- B.4.3 The hydrological catchment of the Wilderness is shown in Drawing 00192 (Sheet 2), of Annex C in Part 9 of the Flood Risk Assessment [[APP-471](#)], labelled as Catchment 13. As illustrated, the catchment drains to the east, to its outlet at the confluence with the Mardyke and the majority of the catchment area is located to the north of the Project road alignment. Construction of the Project will not alter the runoff response of the catchment, as flows from the highway would be attenuated to match greenfield (existing) rates (secured by commitment RDWE035 in the Code of Construction Practice, First iteration of Environmental Management Plan v5.0 [[REP5-048](#)]). In addition, the watercourse diversion proposals would maintain the transfer of flow to the existing catchment outlet at the Mardyke confluence. It is therefore considered that the existing hydrology that maintains the watercourses that flow through The Wilderness and its vicinity would not be adversely impacted.
- B.4.4 The pond that is lost at the Wilderness is largely rainfall fed and this regime would also supply water to the replacement pond that is proposed.

Annex C Post-hearing submissions on Agenda Item 5: Shorne Woods SSSI Impact

C.1 Introduction

- C.1.1 This section provides the post-hearing submissions for agenda item 5 Shorne Woods SSSI Impact, from Issue Specific Hearing 9 (ISH9) on 23 October 2023 for the A122 Lower Thames Crossing (the Project).

C.2 Hearing Action Point 18: Shorne Woods Country Park – Retention of Proposed Car Park Adjacent to the Park

- C.2.1 Hearing action point 18 requests: “*Provide an updated position in respect of the car park currently proposed to be retained and then operated by KCC, having regard to the stakeholder feedback including submissions from Kent County Council, Gravesham Borough Council, Natural England and other relevant IPs. Please either provide a specific response to this action or include it with the answers to ExQ2 Q11.4.1 and Q11.4.2.*” The Applicant’s response is below.
- C.2.2 In the light of the representations made by Interested Parties, 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.

C.3 Response to Examining Authority query on impact of more visitors on SSSI

- C.3.1 The effects of recreational facilities on the SSSI have been assessed by the Applicant, with details of the assessment provided in Appendix A of the Environmental Statement Addendum [[REP5-062](#)]. The assessment has considered the usage of the car park together with accompanying recreational facilities (kiosk, toilets, cycle hub) as a worst-case assessment. The assessment has been based on professional judgement and makes reasonable assumptions around usage based on current visitor numbers and behaviours at SWCP. 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.
- C.3.2 In the Applicant’s response to ExQ2 Q11.4.1 and Q11.4.2, the primary function of the proposed car park is described as 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. The car park therefore provides 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.

- C.3.3 Paragraphs A.4.6 to A.4.10 of Appendix A of the Environmental Statement Addendum [[REP5-062](#)] describe how 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.
- C.3.4 A further refinement of the Applicant's assessment of potential users of the proposed car park, taking into account detail relating to occupancy and turnover of spaces across the year, has been provided as part of the Applicant's responses to ExQ2 Q11.4.1 and Q11.4.2 and has also been shared with Natural England. The Applicant is therefore content that no significant effects on the Shorne and Ashenbank Woods SSSI are considered likely to arise either as a result of the creation of the new car park at Thong Lane or as a result of new WCH routes to the south of the A2.

C.4 Shorne and Ashenbank Woods SSSI boundary revision

- C.4.1 The Applicant responded at Comments on WRs Appendix A: Statutory Environmental Bodies [[REP2-046](#)] to the Shorne and Ashenbank Woods SSSI boundary issue raised by Natural England in their Written Representation [[REP1-262](#)] that identified an error between their published dataset and their internal boundary mapping records. Its response was to update its assessment using this newly received boundary. Its conclusion was that this new boundary did not change its original assessment of likely significant effect on the SSSI.
- C.4.2 In Natural England's Deadline 4 Submission [[REP4-324](#)], Natural England acknowledged this revised assessment and requested that the Applicant provided a revised figure showing the amended SSSI boundary. The Applicant has submitted that revised figure in the Statement of Common Ground between the Applicant and Natural England at Deadline 5 [[REP5-038](#)], in Annex C.16.
- C.4.3 During ISH9, Natural England stated that they would want to see the revised figure secured in a control document within the application. It is the Applicant's view that this would sit most comfortably within the outline Landscape and Ecology Management Plan (oLEMP) as a new management area. If Natural England is content with this approach, the Applicant will action this and provide as part of the next oLEMP revision.

Annex D Post-hearing submissions on Agenda Item 6: Coalhouse Fort

D.1 Introduction

- D.1.1 This section provides the post-hearing submissions for agenda item 6 Coalhouse Fort, from Issue Specific Hearing 9 (ISH9) on 23 October 2023 for the A122 Lower Thames Crossing (the Project).
- D.1.2 There are no post-hearing written submissions for this agenda item.

Annex E Post-hearing submission on Agenda Item 7 – Hole Farm Community Woodland

E.1 Introduction

- E.1.1 This section provides the post-hearing submissions for agenda item 7 Hole Farm Community Woodland, from Issue Specific Hearing 9 (ISH9) on 23 October 2023 for the A122 Lower Thames Crossing (the Project).

E.2 Hearing Action Point 24: Hole Farm

- E.2.1 Hearing action point 24 requests: “*Applicant to submit the plan which was shared with the ExA at the hearing, which identified the various elements of community woodland, nitrogen deposition, etc.*” The Applicant’s response is below.
- E.2.2 The Applicant has prepared the plans as shown in the ISH9 hearing and these accompany this submission: ISH9 Support Information [**Document Reference 9.150**]. The plans show the areas allocated for Ancient Woodland compensation, Replacement open space and Nitrogen Deposition compensation and how these are compatible within the Town and Country Planning Application made by Forestry England for works at Hole Farm in connection with the Community Forest proposals.

Annex F Post-hearing submission Agenda Item 8: Water Framework Directive

F.1 Introduction

- F.1.1 This section provides the post-hearing submissions for agenda item 8 Water Framework Directive, from Issue Specific Hearing 9 (ISH9) on 23 October 2023 for the A122 Lower Thames Crossing (the Project).

F.2 Hearing Action Point 25: Culverts – Mammal ledges

- F.2.1 Hearing action point 25 requests: “*Provide a response to the queries from Thurrock Council in respect of Table 4.10 in the FRA relating to provisions for the passage of mammals through the culverts, including any provision relating to culverts of a smaller diameter. This could form part of your response to ExQ2 Q11.2.1.*” The Applicant’s response is below.
- F.2.2 Thurrock Council requested clarification on the provision of mammal ledges in proposed culverts.
- F.2.3 It is confirmed that the provision of mammal passages is secured by REAC commitment RDWE044 within the ES Appendix 2.2: Code of Construction Practice [[REP5-048](#)]. This specifies that culverts would incorporate ledges or underpasses to ensure continued passage for mammals. In culverts with smaller dimensions separate mammal underpasses would be provided. The Applicant has also provided clarification on mammal passage provision in relation to culverts within their response to ExQ2 Q11.2.1.
- F.2.4 Further clarification was requested on the number of culverts included within the design. A query was raised by Thurrock Council with regard to a potential discrepancy between the number of culverts described in Table 4.7 (Schedule of watercourse crossings) in Part 10 of the Flood Risk Assessment [[APP-477](#)] and the number illustrated on the Drainage Plans Volume B [[REP4-078](#)] and Volume C [[REP4-080](#)].
- F.2.5 The Applicant clarifies that the Drainage Plans illustrate works to watercourses that are described in both Tables 4.7 and Table 4.8 of Part 10 of the Flood Risk Assessment. Table 4.7 lists proposed crossings of reaches of watercourses that do not require diversion. Table 4.8 includes information on watercourse diversions, the majority of which entail a reach of culverting (as detailed in the table), to allow an open channel diversion to cross the Project road, or to connect to the wider watercourse network. Together, these total 17 No. reaches of culverting.

- F.2.6 The Drainage Works Plans also illustrate a small number of additional culverts. All of these are located on ditches, which will be created along the Project road alignment at the toe of earthworks embankments. The culverts allow the ditches to be conveyed under existing access tracks or side road earthworks and would be short in expanse. Due to the small scale of these culverts and their location on newly created highway drainage ditches, these were not tabulated within the Flood Risk Assessment.
- F.2.7 To provide additional clarity with regard to the proposed culverts, the Applicant will update Table 4.7 and Table 4.8 of Part 10 of the Flood Risk Assessment [\[APP-477\]](#) to include the relevant Works Numbers as presented on the Drainage Plans Volume B [\[REP4-078\]](#) and Volume C [\[REP4-080\]](#) for Deadline 7.

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