

Lower Thames Crossing

9.187 Post-event submissions, including written submissions of oral comments, for ISH11

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1 Introduction

Please note: this document contains National Highways' (the Applicant's) written summary of oral evidence and post-hearing comments on submissions made by others at Issue Specific Hearing 11 (ISH11) held on 22 November 2023.

Where the comment is a post-hearing comment submitted by the Applicant, this is indicated. This document uses the headings for each item in the agenda published for ISH11 [[EV-084](#)] by the Examining Authority.

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 ISH11 by Mr Andrew Tait KC (AT).

1.1.2 The following persons were also introduced to the Examining Authority (ExA):

- a. Tom Henderson, BDB Pitmans, Partner (TH)
- b. Helen Pope, Lower Thames Crossing, Landscape Assessment Specialist (HP)
- c. Steve Knott, Lower Thames Crossing, Landscape Assessment Lead (SK)
- d. Suki Coe, Lower Thames Crossing, DCO and Planning Manager (SC)
- e. Andrew Kay, Lower Thames Crossing, Lead Landscape Designer (AK)
- f. Lisa Driscoll, Lower Thames Crossing, Water and Environment Lead (LD)
- g. Michael Wilson, Lower Thames Crossing, Environmental Impact Assessment Coordinator (MW)
- h. Nick Clark, Lower Thames Crossing, Ecology Lead (NC)
- i. Russell Cryer, Lower Thames Crossing, Habitats Regulations Assessment Lead (RC)
- j. John Clark-Hughes, Lower Thames Crossing, Construction Tunnel Lead (JCH)

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: Kent Downs Area of Outstanding Natural Beauty (AONB) and Wider Landscape Matters

3.1 Item 3(a) Landscape Impacts in Kent Downs AONB

Item 3(a)(i) Is there agreement amongst the parties that adverse landscape effects on the AONB are localised during construction and operation of the road (inclusive of utility works), or do the parties consider that there would be an adverse effect on the character and integrity of the AONB overall?

- 3.1.1 In response to the ExA and following submissions made by Interested Parties (IPs) in relation to the Levelling Up and Regeneration Act 2023 (LURA) receiving Royal Assent, AT noted that in respect of the section 245 duty under LURA, there is already a strong policy test at paragraph 5.151 in the National Policy Statement for National Networks (NPSNN) (Department for Transport, 2014) and also in the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021). AT added that the new section 245 duty has a wider application and is applying the duty beyond the planning context. AT noted that paragraph 5.153 of the NPSNN already makes clear that the Secretary of State should be satisfied that the project will be carried out to high environmental standards and where possible includes measures to enhance the natural environment. The Applicant's interpretation is that the new duty is bringing the general law into line with the NPSNN. AT confirmed that the Applicant would provide a full response on the implications of the LURA amendment in its post-hearing submissions.
- 3.1.2 SC added that the Applicant has already considered enhancement in its application and there are features included that the Applicant believes are enhancements, including woodland planting on a landscape scale. The Applicant has also included green bridges, particularly at Thong Lane and the additional connectivity of habitats through the design of the mitigation measures. SC added that the Applicant has included landscape scale compensation for nitrogen deposition at Blue Bell Hill and Fenn Wood. The Applicant also wished to mention the other elements of the function of the AONB, particularly in relation to recreation and how people can enjoy it, with the Applicant's enhancement of the walking, cycling and horse riding (WCH) network, in particular with the linking of existing woodland and public parks. SC noted the example of Shorne Woods being linked to Great Crabbles Wood and Jeskyns Country Park through the green bridge for Shorne Woods Country Park, through Ashenbank Wood. The Applicant therefore considers that it has taken account of the duty to enhance through the NPSNN, in anticipation of the changes in legislation. SC added that the list of measures can be found in Appendix F of the Planning Statement [[APP-501](#)].

- 3.1.3 HP explained that the landscape and visual impact assessment for the Project has been undertaken in accordance with Design Manual for Roads and Bridges (DMRB) LA 107 Landscape and Visual Effects (Highways England, 2020b), with regard to the Guidelines for Landscape and Visual Impact Assessment Third Edition (Landscape Institute and Institute of Environmental Management and Assessment (IEMA), 2013), as stated in Section 7.3 of Environmental Statement (ES) Chapter 7: Landscape and Visual [APP-145]. The Applicant's position is therefore that the landscape and visual impact assessment has been undertaken in accordance with best practice guidance.
- 3.1.4 The Applicant considers that effects on the Kent Downs AONB would be localised during construction and operation. The Context Figure produced for Issue Specific Hearing 11 [AS-110] illustrates the Project Order Limits in the context of the wider Kent Downs AONB designation. A small part of the designated area would be affected by the Order Limits along the existing M2/A2 corridor.
- 3.1.5 HP explained that there are extensive areas of woodland to the north and south of the M2/A2 corridor within Shorne Woods Country Park to the north and Ashenbank Wood and Cobham Hall Registered Park and Garden to the south. HP added that establishing woodland is also present within Jeskyns Community Woodland to the south. These woodland areas would curtail the perception of construction works and the operational road corridor within the wider AONB. This is discussed in ES Appendix 7.9: Schedule of Landscape Effects [APP-384] for the West Kent Downs (sub area Cobham) Local Landscape Character Area (LLCA) and the West Kent Downs (sub area Shorne) LLCA, with the special qualities of the Kent Downs AONB discussed for the overarching West Kent Downs Landscape Character Area (LCA) 1A. HP explained that significant effects have been assessed within the Kent Downs AONB during construction and operation. However, it is noted in ES Appendix 7.9: Schedule of Landscape Effects [APP-384] that these effects would be limited to the M2/A2 corridor and the western edge of the Kent Downs AONB.
- 3.1.6 HP noted that ES Appendix 7.11: Traffic and Noise Effects on the Kent Downs Area of Outstanding Natural Beauty [REP1-162] considers tranquillity within the wider Kent Downs AONB. Tranquillity is a component of landscape character and is identified as a special quality of the AONB in the Kent Downs AONB Management Plan 2021–2026 (Kent Downs AONB Unit, 2021), due to the respite the tranquil areas provide from noise and disturbance.
- 3.1.7 HP explained that ES Appendix 7.11: Traffic and Noise Effects on the Kent Downs Area of Outstanding Natural Beauty [REP1-162] concludes that there would be localised areas where the level of tranquillity would reduce during construction and operation as a result of noise and/or visual disturbance. There would also be localised areas where the level of tranquillity would increase due to predicted reductions in traffic flows.
- 3.1.8 In conclusion, the Applicant does not consider that there would be a significant adverse effect on the character and integrity of the wider Kent Downs AONB, due to the localised nature of effects arising from the Project during construction and operation.

- 3.1.9 HP added that ES Appendix 7.9 [APP-384] reports significant adverse effects on landscape character within the setting of the Kent Downs AONB during construction and operation, largely attributed to the M2/A2/A122 Lower Thames Crossing junction and the South Portal approach road cutting, and also the southern tunnel entrance compound during construction. Further, HP noted that there are few locations within the Kent Downs AONB where these Project elements would be perceived, due to the presence of woodland at Shorne Woods Country Park, Ashenbank Wood, and Jeskyns Community Woodland. Within the AONB, the M2/A2/A122 Lower Thames Crossing junction would mainly be perceived from the western edge of the AONB and from elevated areas such as Randall Heath in Shorne Woods Country Park. HP added that the southern tunnel entrance compound and South Portal approach road cutting would be mainly perceived from Shorne Ifield Road along the north-western edge of the AONB. HP explained that representative viewpoints S-16, S-19 and S-29 on ES Figure 7.16 [REP1-128] represent views from the outside of the Kent Downs AONB in the direction of the Project. HP explained that significant effects are reported in construction and opening around winter at representative viewpoints S-16 and S-19, with this reducing to not significant at design year summer, noting that significant effects are only reported during construction at representative viewpoint S-29 [APP-385].
- 3.1.10 In terms of severance, HP explained that there are few locations within the Kent Downs AONB where the A2 corridor features prominently in view and where effects of severance can be perceived, noting that the most affected locations are the existing overbridges that cross the A2 corridor.
- 3.1.11 In response to NE's comments on photomontages, AT confirmed that photomontages were agreed with NE, as set out in the SoCG [REP7-106], noting that there would be limited views of the green bridges from further afield due to woodland on either side which fits with the assessment of the severance effects being localised and similarly with the bridges having a function in addressing that localised severance. AT added that if there is a particular suggested viewpoint that NE would like the Applicant to look at, the Applicant is happy to discuss with NE, bearing in mind that it is a time heavy process producing a photomontage and that Deadline 8 would not be an achievable timeframe for its submission if NE requests this, which the Applicant was grateful the ExA acknowledged.
- 3.1.12 [**Post-hearing submission:** the Applicant refers to Annex A.2 for more information on the Levelling-up and Regeneration Act 2023 and A.6 for confirmation from NE that would not require an additional photomontage.]

Item 3(a)(ii) The Applicant has advised in response to both ExQ1 and ExQ2 why it has ‘adjusted’ the boundaries for the Cobham and Shorne Local Landscape Character Areas (LLCA) for the purpose of assessing landscape impacts; however, can it explain the level of sensitivity and significance of effects it would ascribe to those areas if the boundaries had not been ‘adjusted’ and instead the Kent Downs AONB LLCA boundaries (which echo the Kent County Council’s 2004 LCA) were used? Is there a difference? Having regard to the Applicant’s adjusted boundaries, can the Applicant explain what the significance of effect would be if the areas of Cobham and Shorne were not combined in the assessment but were considered and reported separately?

- 3.1.13 HP explained that the Applicant’s approach to determining the LLCA boundaries within the Kent Downs AONB was described in Comments on LIRs Appendix D: Gravesham Borough Council [[REP2-058](#)]. HP noted that the guidelines for Landscape and Visual Impact Assessment (LVIA) Third Edition (Landscape Institute and IEMA, 2013), state in relation to using existing landscape character assessments that these are considered a robust information source. HP also noted that the guidelines state that existing assessments may need to be reviewed and interpreted to adapt them for use in the LVIA. HP explained that the guidelines also state that fieldwork will also be required to check the applicability of the assessment throughout the study area and to refine it where necessary, for example, by identifying variations in character at a more detailed scale.
- 3.1.14 In line with the Guidelines for Landscape and Visual Impact Assessment, the Applicant undertook a review of existing landscape character that included field survey work. It was determined that the High Speed 1 (HS1) corridor and associated planting strongly define the northern extent of the West Kent Downs (sub area Cobham) LLCA and therefore this is the LLCA boundary that is reflected on ES Figure 7.2: Local Landscape Character Areas [[APP-198](#)] and used in the assessment in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)]. The Applicant considers that the approach undertaken is in line with best practice guidance.
- 3.1.15 HP added that during the field survey work, it was apparent that existing planting along the northern edge of the park and planting to the south of the HS1 corridor, formed a strong boundary in the landscape and curtailed the section of the road corridor to the north. HP added that there is also an area where the HS1 route goes into tunnel, which is where the boundary is shown to deviate slightly further south of the HS1 corridor. The existing vegetation along the north of Cobham Hall registered park and garden forms a strong boundary in front of the existing M2/A2 junction, and the Brewers Road and Halfpence Lane roundabout were considered by the Applicant to sit better with the landscape character of the A2 corridor and therefore within the Shorne sub-area. The Applicant referred to ‘Additional Submission - 9.205 Issue Specific Hearing 11 Supporting Information item 3a ii)’ [[AS-111](#)] during the hearing.

- 3.1.16 In respect of the wider context of the West Kent Downs LCAs, HP explained that the published landscape character area boundary from the Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) follows the central reserve of the A2 corridor. If this boundary was used for the assessment in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)], the assessment on the overarching West Kent Downs LCA 1A would not change. However, the Applicant acknowledges that the assessments for the West Kent Downs (sub area Cobham and sub area Shorne) LLCAs would change, as effects arising from the Project would be apportioned differently between the two LLCAs.
- 3.1.17 HP explained that, using the published boundaries, the sensitivity of the West Kent Downs (sub area Cobham) LLCA would be assessed as very high rather than high as stated in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)], on account of the increased susceptibility to change due to vegetation loss between the HS1 and A2 corridors. The significance of effect levels within sub area Cobham would be assessed as large adverse in construction rather than moderate adverse; large adverse in opening year (winter) rather than slight adverse; and moderate adverse in design year (summer) rather than slight adverse. HP noted that this would be due to a greater proportion of the Project being located within the LLCA. However, this would only be in the area between the HS1 corridor and the A2 central reservation.
- 3.1.18 Conversely, HP noted, construction effects within the West Kent Downs (sub area Shorne) LLCA would be assessed as large rather than very large as stated in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)], due to the reduced extent of construction activity within the LLCA. Effects during opening year (winter) and design year (summer) would remain as stated in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)] as large adverse and moderate adverse respectively. Although effects would reduce due to the Project occupying a smaller footprint within the LLCA, the levels of significance would remain the same.
- 3.1.19 HP continued that, with regard to the reporting of effects on the West Kent Downs (sub areas Cobham and Shorne) LLCAs, these are already assessed and reported on separately in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)] and in Tables 7.18 and 7.26 of ES Chapter 7: Landscape and Visual [[APP-145](#)]. Effects relating to the overarching West Kent Downs LCA 1A are reported in Tables 7.33 and 7.34 in ES Chapter 7: Landscape and Visual [[APP-145](#)]. HP explained that these would not change if the assessment had used the published landscape character area boundaries from the Kent Downs AONB Landscape Character Assessment Update, even though there would be some additional significant effects on the West Kent Downs (sub area Cobham) LLCA. The individual assessments for the sub areas of Cobham and Shorne would not exceed the assessment stated for the overarching West Kent Downs LCA 1A in ES Chapter 7: Landscape and Visual [[APP-145](#)].
- 3.1.20 AT concluded that the sub areas were reported separately and aggregated, but that the aggregated assessment would not change irrespective of which LLCA boundaries are applied.

- 3.1.21 In response to the ExA's query on the adjustment of assessment, HP confirmed that the Applicant's understanding is that the landscape character assessment boundary has not changed between the two applications. AT confirmed that the Applicant would respond in writing in relation to the differences between the boundaries in the two applications.
- 3.1.22 In response to the submission made by Gravesham Borough Council (GBC) in relation to changes in design and re-evaluation, SK explained that there have been some changes to the green bridge design which is being widened and also the utilities design, resulting in a reduced area of assumed vegetation removal. SK added that the re-evaluation of the assessment was not just concerned with design changes, but also a re-evaluation of sensitivity and also a general re-evaluation of the assessments undertaken. The Applicant agreed to submit its position in full in writing.
- 3.1.23 HP added, in response to GBC, that the narrow area of the LLCA between the urban area of Strood and HS1 is a wooded area which is very similar to that on the opposite side of HS1, whereas further north of that boundary, as illustrated on ES Figure 7.2: Local Landscape Character Areas [[APP-198](#)], there is a mosaic of open fields and scattered wooded blocks. HP explained that this was considered to form a transition between the Shorne and Cobham sub areas.

Item 3(a)(iii) Will the green bridges over the A2 at their proposed widths provide valuable landscaping connectivity to reduce the severance between the historically linked landscape of Cobham and Shorne (noting that we do not need to re-visit the discussions on Green Bridge design)?

- 3.1.24 AT explained that Post-event submissions, including written submission of oral comments, for ISH6 [[REP4-182](#)] sets out the physical and other constraints on further widening at paragraphs 4.1.14 through to 4.1.16 and in Annex D, noting in particular in relation to Brewers Road green bridge, that further widening would affect land outside of the Order Limits and further west, and impinge on site of special scientific interest (SSSI) woodland, with engineering issues at the widening of Thong Land green bridge south.
- 3.1.25 HP explained that at present, the northernmost part of the Kent Downs AONB is physically separated from the AONB to the south by HS1 and the existing A2 corridor. The existing road corridor comprises four lanes and a hard shoulder to both the eastbound and westbound carriageways, with ten lanes in total. The physical separation of the Kent Downs AONB as a result of the existing A2 corridor is most apparent when seen from the Park Pale, Brewers Road and Thong Lane overbridges. From the Thong Lane overbridge, ten lanes and associated highway infrastructure and traffic are prominent features in views to the east and west.
- 3.1.26 HP added that the perception of separation is heightened at Park Pale overbridge due to the additional M2 junction 1 slip roads and associated hard shoulders, resulting in 13 lanes in total. Park Pale, which runs parallel to the A2 corridor, also contributes to the perception of separation. From Brewers Road overbridge, the perception of separation within the Kent Downs AONB as a result of the existing A2 corridor is reduced by the woodland belt in the central

reservation, which visually separates the A2 eastbound and westbound carriageways so that only one carriageway at a time is generally seen when crossing the bridge. However, HP noted, both carriageways comprise a strong physical barrier, experienced one after the other in sequential views.

- 3.1.27 HP explained that from other Representative Viewpoints within the Kent Downs AONB shown on ES Figure 7.16 [\[REP1-128\]](#), the existing A2 corridor does not feature prominently in views, with the exception of the adjacent Representative Viewpoint S-17 from Thong Lane at the entrance to the Inn on the Lake Hotel. There is therefore a lesser perception of physical separation within the AONB beyond the three overbridges crossing the A2 corridor. Furthermore, in a number of views, for example, from Representative Viewpoint S-03, views extend to the AONB landscape on the other side of the A2 corridor, thereby reducing the perception of separation.
- 3.1.28 HP noted that there are therefore relatively few locations within the Kent Downs AONB where the existing A2 corridor features prominently in the view and where the effects of severance are perceivable, with the most affected locations comprising close-range, elevated views from the overbridges crossing the existing A2 corridor. It is acknowledged by the Applicant that the permanent removal of vegetation from the central reservation of the A2 and in some areas along the edges of the A2 corridor would increase the effects of severance and contribute to significant adverse residual effects on the landscape character of the Kent Downs AONB. This is discussed in the assessment commentary for the West Kent Downs (sub area Shorne) LLCA at design year (summer) in ES Appendix 7.9: Schedule of Landscape Effects [\[APP-384\]](#).
- 3.1.29 However, HP added, the proposed Brewers Road and Thong Lane south green bridges would help to reduce the perception of severance between the northern and southern parts of the Kent Downs AONB once planting has established within the green strips along the bridges, as the planting would link vegetation north and south of the A2 corridor. The proposed planting on the green bridges would also help to screen views of the widened A2 corridor for users of the bridge, thereby also helping to reduce the perception of separation.
- 3.1.30 HP explained that since the Development Consent Order (DCO) application was submitted in 2022, there have been ongoing discussions with Natural England (NE) on the layout of the Brewers Road and Thong Lane south green bridges and what the optimum design might be in terms of the recreational routes along the bridges and habitat for biodiversity. To allow more flexibility at detailed design on the layout of the green bridges and to facilitate further discussion with stakeholders, Clauses S1.17 and S2.12 of the Design Principles [\[REP7-140\]](#) have been updated to state a minimum planting width across the bridges rather than specifying the planting widths at each edge of the bridge.
- 3.1.31 AK explained that, with regard to planting typology proposed on green bridges, it is subject to spatial constraints and technical constraints and so throughout the Project, the Applicant has wanted to promote woodland planting where these spatial constraints exist, and has used shrubs of intermittent tree planting typology which extends across the green bridges themselves. AK noted that this extends into the outline Landscape and Ecology Management Plan [\[REP7-132\]](#) which confirms that where there are spatial constraints, the management

of shrubs and intermittent tree planting is to achieve woodland character. The Applicant is constrained by technical ability to plant large swathes of woodland on these bridges, but the management of these areas can act as a woodland cross. AK added that, as shown on page 45 of the Project Design Report Part D – General Design South of the River [[APP-509](#)], the intermittent tree planting should be managed to perform a dense woodland edge on the bridge and should be promoted as such.

Item 3(a)(iv) Are there any landscaping mitigation measures not already proposed by the Applicant that would reduce the impact of the Proposed Development on the AONB, and/or any measures that would instead compensate for the harm (noting that we do not need to re-visit the discussions on the site selection for nitrogen deposition compensation areas)?

- 3.1.32 In response to the comments made by IPs about Park Pale Bridge, AT noted that this was discussed at ISH6 and the position is summarised at paragraph 4.1.19 of Post-event submissions, including written submission of oral comments, for ISH6 [[REP4-182](#)] as to the difficulties that arise in relation to the effect on the sole access to the golf course, key access for Harlex Haulage and the relatively limited benefit that would arise from this. In relation to additional design principles, AT explained that these can be found in the Design Principles [[REP7-140](#)], noting that in STR.06 and S1.09, extensive provisions in relation to consistency of design approach and appropriateness to the colour palette required in the Kent Downs AONB, amongst other matters, have been indicated following discussions with NE. AT added that STR.06 and S1.09 commit to retaining structures and bridge abutments within the Kent Downs AONB and its setting being either green walls, earth banks or clad with hard materials, in accordance with the AONB Landscape Design Handbook (Kent Downs AONB Joint Advisory Committee, 2018). This will be further elaborated in relation to street furniture along the A2 mainline and local connector roads in the Kent Downs AONB. AT explained that the colour palette of the street furniture would be informed by the Kent Downs AONB Landscape Design Handbook. The Applicant notes that there is also further discussion of a provision that will come forward at Deadline 8 regarding low level lighting, or lower column heights, along Brewers Road and Thong Lane south green bridges.

Item 3(a)(v) The ExA would like an update on the draft S106 Agreement with Kent County Council comprising a ‘compensatory enhancement fund’ for the Kent Downs AONB Unit (as per the Applicant’s Response to EXQ1 12.2.9b [[REP4-200](#)] and as referenced in Item No. 2.1.62 of the Statement of Common Ground with Gravesham Borough Council [[REP6-025](#)]).

- 3.1.33 AT confirmed that agreement has been reached in relation to the compensatory enhancement fund, both as a mechanism in the context of the NPSNN and also in relation to the amount agreed. In relation to the landscape and the AONB

designation, that fund has been agreed between the Applicant and Kent County Council.

3.2 Agenda Item 3b) Wider Landscape Matters

Item 3(b)(i) The Applicant has summarised the Proposed Development’s overall landscape impact in document [APP-524] at pages 68-69. It ascribes the overall impact as ‘Moderate Adverse’. The ExA would like to hear from relevant parties on whether they agree with this conclusion.

3.2.1 AT explained that the Appraisal Summary Table (AST) is a WebTAG requirement but particularly in relation to the investment decision context. It is the ES that is the clear document which the case is based on. AT noted that the overall landscape and visual effects reported in the ES are consistent with the AST report set out at paragraph 7.9.22 of ES Chapter 7 [APP-145], which looks at the overall landscape and visual effect on the existing landscape and visual amenity on a combined basis, concluding that it will be moderate adverse effect. AT noted that this is preceded by a detailed summary in relation to the disaggregated assessment in relation to character areas, explaining that there is consistency between the two but that they serve different purposes.

3.2.2 HP added that the overall assessment score within Section 4.4 of the Appraisal Summary Table Report [APP-524] corresponds with the single conclusion of the likely significant effect on landscape and visual amenity presented in Section 7.9 of ES Chapter 7: Landscape and Visual [APP-145]. The single conclusion was reached following a review of the residual effects of the Project stated in ES Appendix 7.9: Schedule of Landscape Effects [APP-384] and ES Appendix 7.10: Schedule of Visual Effects [APP-385]. HP explained that due to the extensive mitigation measures proposed as part of the Project, most landscape and visual effects would reduce to moderate or below at design year (summer). Adverse effects remaining above moderate would be localised and relate to two LLCAs, five Representative Viewpoints and one visual receptor group out of a total of several hundred landscape and visual receptors. It was therefore considered that an overall moderate adverse effect would be a proportional reflection of the Project.

Item 3(b)(ii) Are there any areas across the Proposed Development where operational lighting would have a significant landscape effect and are there any mitigation measures that could minimise the effect? The ‘Environmental Lighting Zones’ document [APP-199] may prove useful to aid this part of the discussion.

3.2.3 AT added in response to the submissions made by IPs that in Design Principles LST.02 and LST.03 [REP7-140], there is a requirement for the detailed design to preserve nocturnal character through minimising lighting; the measures are dealt with at paragraph 2.4.26 of ES Chapter 2 [APP-140]; and the assessment is clearly set out in ES Appendix 7.9 [APP-384] and ES Appendix 7.10 [APP-

[385](#)]. AT explained that low level lighting on green bridges is in the AONB and is also applicable here.

3.2.4 **Post-hearing written submissions:** these are contained within Annex A and include:

- a. Annex A.2 Hearing Action Point 1: the Levelling-up and regeneration Act 2023 (LURA) – Section 245 (5) & (6)(a)
- b. Annex A.3 Hearing Action Point 2: Local Landscape Character Area Boundaries
- c. Annex A.4 Hearing Action Point 3: Assessment of significance – AONB Character areas
- d. Annex A.5 Hearing Action Point 4: Kent Downs AONB landscape impact assessment
- e. Annex A.6 Hearing Action Point 6: Photomontages of Green Bridges within the Kent AONB
- f. Annex A.7 Hearing Action Point 7: Width of the Green Bridges
- g. Annex A.8 Gravesham Borough Council request to Heads of Terms in relation to Kent Downs AONB Compensatory Enhancement Fund

4 ExA questions on: Coalhouse Fort and Point

4.1 Agenda Item 4a) Coalhouse Point

Item 4(a)(i) In addition to any questions raised within the Habitat Regulation Assessment and the Report on the Implications on European Sites, the ExA will be looking for the Applicant, Thurrock Council and the Environment Agency to confirm the current position of the discussions relating to the provision of water to allow the proposed wetland mitigation to be provided at Coalhouse Point

- 4.1.1 LD explained that the Applicant has proposed to deliver a new wetland habitat formed of shallow scrapes and a network of ditches, delivered through the realignment of the existing land drainage at Coalhouse Point. The proposals would maintain the existing flow regime that conveys flows from south to north towards Star Dam. LD explained that hydrology studies indicated that there is insufficient water in the natural catchment to maintain water levels in the new wetland features at their design capacity throughout the year and therefore provision for a secure and suitable water supply to ensure the long-term delivery of the ecological objectives was included within the DCO application in October 2022 via a water inlet directly from the existing embankment of the River Thames.
- 4.1.2 The Applicant is of the view that the proposed design for the water supply at Coalhouse Point, via a water inlet valve installed via the existing embankment at the river frontage, is the most appropriate and reliable solution for supplying water to the mitigation area. LD explained that this would supply a sufficient quantity of water required for the wetland habitat creation at Coalhouse Point and provides the same quality of water (direct from the River Thames) as would be supplied from the existing drainage arrangements from the Coalhouse Fort moat. The approach to providing the water supply is secured via the Code of Construction Practice (CoCP) [\[REP7-122\]](#), Register of Environmental Actions and Commitments (REAC) commitment HR010.
- 4.1.3 In response to the ExA's query in relation to discussions with stakeholders, LD explained that a stakeholder site visit was carried out on 26 April 2023 by the Applicant. This was attended by representatives of the Environment Agency, NE, Historic England, Thurrock Council and the management team of the Coalhouse Fort monument. This was used as an opportunity to report on the wetland proposals and discuss the existing drainage arrangement at the Coalhouse Fort moat. LD noted that a number of concerns around the viability of the existing drainage arrangements to supply the Project's wetland creation water supply needs were raised by stakeholders.
- 4.1.4 LD explained that three key documents have been submitted to the Examination in relation to the Coalhouse Point wetland proposals:
- Annex C.8 of the Statement of Common Ground (SoCG) between the Applicant and the Environment Agency (EA) [\[REP7-102\]](#) – this focuses on

the new inlet structure and covers its construction footprint, construction methodology and other details.

- b. Annex C.13 of the SoCG between the Applicant and NE [REP7-106] – this provides information and clarification regarding indicative scrape and ditch design profiles, estimated water demand and water level management. This document was shared with NE to confirm the feasibility of the wetland mitigation and the Applicant continues to have constructive engagement with NE on the matters in relation to the Coalhouse Point wetland proposals and its long term management.
- c. Coalhouse Point Flood Risk Assessment [REP6-102] – this presents the analysis of detailed hydraulic modelling undertaken to assess the impacts of the proposed Coalhouse Fort car park and gas facility in that location. LD noted that the discussions are tracked with the progress in the SoCGs.

- 4.1.5 AT added that the SoCG with the EA has been submitted at Deadline 7 [REP7-102] and confirms that the EA has reviewed and accepted the Coalhouse Point technical note that has been referred to.
- 4.1.6 LD confirmed that in relation to the SoCG with Thurrock Council (TC), the Applicant is awaiting feedback on items 2.1.163 and 2.1.274 [REP6-030]. The Applicant understands that following TC's review of the flood risk assessment that was submitted at Deadline 7 [REP7-130] (Part 10 of the FRA, submitted at DL7), the Applicant is hoping to progress that to a matter agreed.
- 4.1.7 LD confirmed in response to the ExA that there would be one new inlet and there is one existing inlet at Coalhouse Fort.
- 4.1.8 In response to the IP submissions made in relation to agreements with statutory bodies, AT confirmed that there is a wide measure of agreement with the EA, NE and also TC. Secondly AT noted that as NE mentioned, there is a REAC commitment (HR010) providing that it is a self-regulating valve that would be the inlet approach. In relation to the licensing position and the requirement for consents under sections 24 and 25 of the Water Resources Act 1991 (WRA), this is not disapplied and this is recorded in the Consents and Agreements Position Statement [REP7-094]. Thirdly, in response to TC's query regarding the structure of the flood bund, AT confirmed that the Applicant would be responsible in the long term and that the existing flood bund had been incorporated into the Order Limits, and is subject to compulsory acquisition. The Applicant would therefore take permanent ownership of the part of the feature that falls within the Order Limits shown in the Flood Risk Assessment (FRA) [REP6-102]. In response to TC's query regarding timings, AT noted that this was scheduled to be addressed at Agenda Item 4(a)(iv). Similarly, in relation to the query in respect of the link to the moat raised by TC, the Applicant agreed to address this later in the agenda, as requested by the ExA.
- 4.1.9 In response to the ExA, LD confirmed that the FRA has considered a range of scenarios, e.g. overtopping, breach scenario and the scenario where the inlet gets stuck open.

Item 4(a)(ii) Dependent upon the answer to (i) above, there are a number of issues that may require to be considered. It is recognised that there is an existing hydrological regime that currently includes flows entering the system from agricultural land in the catchment and ingress from the Coalhouse Fort moat system. In the Draft Statement of Common Ground between (1) National Highways and (2) Thurrock Council [REP6-031], Item No. 2.1.263 suggests that ‘ ... the current proposal is to allow ingress of water from the River Thames through a water inlet with self-regulating valve, or equivalent ...’. The ExA will be looking to the relevant parties to give a summary of their positions on the issues listed below, with full details to be provided in writing by Deadline 8, with a reflection on the points raised by others during the hearing:

- **Hydraulically, how does this proposed alternate method of water supply change the hydraulic operation of the proposed wetland and the rest of the catchment from the use of the Coalhouse Fort moat?**
- **What are the likely changes in chemical composition between the current water in the system utilising the Coalhouse Fort moat inlet and one directly from the River Thames?**
- **Are the chemical and hydrological changes likely to provide the ecological environment intended or is there a risk that those species that wish to be encouraged will not colonise the mitigation habitat?**

- 4.1.10 LD explained that on the plan [[AS-112](#)] the yellow line represents the way the water moves through the system from the existing inlet at Coalhouse Fort. The water then feeds through a system of ditches which then passes along the river frontage and up the central ditch away from the River Thames to the north, linking into the water courses where the Star Dam is situated. It then flows back into the River Thames at the Bowaters Sluice. LD explained that the new inlet system would allow the Applicant to supply water directly and in a hydraulically less complex manner than it would via the alternative option which was the moat system.
- 4.1.11 LD noted in response to the ExA, that the Applicant’s position is that both means of water supply that would deliver water into the new features would be of a similar chemical composition. Both options would be a combination of River Thames water and rainfall received.
- 4.1.12 LD confirmed that there is very low risk that the intended ecological environment will not be created as the chemical composition would be similar to the existing hydrological regime as the source of the water is ultimately the same, i.e. the River Thames.

- 4.1.13 In response to the ExA's query regarding species, LD explained that the wetland design plan [AS-112] shows a series of water level controls and a structure controlling outflow into the watercourse that flows to Star Dam. LD added that with those control measures in place which are secured by a REAC commitment (HR010), the Applicant is able to control water levels in the system. LD noted that after the initial fill from the inlet, the Applicant's water demand is quite small and this would consist of some small top-up volumes of water entering the system during the summer months.
- 4.1.14 In response to the ExA, LD confirmed that the water level in the Applicant's system would have no impact on the water level at the Coalhouse Fort moat.
- 4.1.15 In response to the point raised by Mr Holland in relation to water to the north, LD confirmed that the water in this ditch is not fresh water, as it has the influence of the water from the River Thames which feeds through the system via the moats.
- 4.1.16 In response to the ExA's query relating to regeneration in the area, RC confirmed that the wetland area would be left to colonise naturally, and the propagules would come in and out of the water through the inlet. RC added that in relation to the grassland, the commitment is there to sow with an appropriate mix, which will be agreed at detailed design.

Item 4(a)(iii) At Compulsory Acquisition Hearing 4, it was suggested that the water in the watercourse system would continue to be required for agricultural irrigation. The ExA wishes to hear the Applicant’s and other IP’s views on the following points, with detailed comments to be submitted in writing at Deadline 8, with a reflection on the points raised by others during the hearing:

- **Would an inlet at Bowater Sluice increase or decrease the potential for watercourse water to be utilised as a source for irrigation purposes?**
- **Would the chemical content of the water from this source allow it to be used as an irrigation source?**
- **What amendments are proposed at Star Dam to manage the water from both sources, should a new inlet from the River Thames become the preferred option?**
- **Within the catchment, at what point does the current ability to draw irrigation water from Coalhouse Fort inlet cease, and where would that change to if there was a supplementary source from Bowaters Sluice, or other, new, inlet from the river?**
- **Who will be responsible for the setting of the operational parameters, the operation and maintenance of any new inlet structure and the Star Dam?**

- 4.1.17 LD confirmed that the Applicant has not been made aware of any irrigation systems operating in the Bowater Sluice area of the Project. The Applicant has had discussions with the current landowner who has confirmed that he does not use water for this purpose in this area.
- 4.1.18 AT confirmed that there are no amendments necessary at Star Dam as there is no significant change to the overall volumes of water flowing through the system. LD explained that the operational parameters for the Coalhouse Fort mitigation area will be set to achieve the management aims and objectives for this area as described in Section 6.3 and Section 8 of the outline Landscape and Ecology Management Plan [\[REP7-132\]](#). LD noted that these objectives have been set in accordance with Department for Environment Food and Rural Affairs (Defra) guidance Manage lowland wet grassland for birds (Defra, 2021), as secured in REAC commitment HR010 [\[REP7-122\]](#).
- 4.1.19 LD explained that the maintenance of any new inlet structure and the structures within the wetland that will provide for water level control is secured by REAC commitment RDWE014 within the CoCP. This commitment was updated at Deadline 7 to broaden its scope to cover all hydraulic water or control structures.

4.1.20 **[Post-hearing submission:** In response to the ExA regarding physical elements to be maintained at Star Dam, the Applicant would respond in writing.]

4.1.21 In response to the ExA's question regarding surveys to be undertaken, RC confirmed that the surveys are not expected to produce very different results. If they were to do so, the Applicant would work around this.

Item 4(a)(iv) There appears to be a complexity in the limitations on working practices and timeframes within the Coalhouse Point area.

• Can the Applicant provide a simple breakdown of the allowable working periods, showing how the constraints are being met, alongside highlighting where it is secured in the REAC?

4.1.22 AT noted that the works at Coalhouse Point must precede the release of the main works at the North Portal site as they are ecological mitigation for disturbance to birds in the area, and so the works are programmed as early as possible.

4.1.23 JCH explained that the nature of the tidal flats is such that many species utilise the mud flats at low-tide but then at different states of the tide, fly out onto the functionally linked land that forms part of the North Portal area. JCH explained that the whole idea is to provide mitigation and additional habitat, which is the intention of the wet scrapes and ditches. JCH added that the works are programmed as early as possible following the grant of DCO, which would release related elements such as additional surveys, consenting works, discharge consents and design work, etc. JCH added that as soon as that work has been undertaken, physical work would be undertaken to create the ditches and scrapes, and the inlet structure. This is secured by the Environmental Management Plan [REP7-122] and commitments in the REAC at HR010 and HR011. JCH added that the background is discussed in the Habitats Regulations Assessment [APP-487] itself, in particular paragraphs 7.1.27 and 7.1.28 which discuss in detail how the work would be undertaken and how it relates to seasonal constraints. JCH noted that the preferred season is late spring/early summer and, based on the current programme, the work falls in the appropriate season, so the Applicant does not anticipate any problem with this.

4.1.24 In response to the submission made by Mr Holland, RC explained that the Applicant has committed to seasonally constraining the work where possible. It is more advantageous to carry works out as quickly as possible to get bird habitats in place for the birds than manage the small risk of there being any additional disturbance from the works themselves. The Applicant has responded to NE's concerns earlier in the Examination about seasonal constraint. RC added that the programme shows that those works would be carried out in the preferred seasonal window, but as programmes are subject to change, it is important to get these works done as soon as possible and risk any insignificant additional disturbance, rather than put the whole thing off to manage that very small risk.

- 4.1.25 In response to the ExA, RC confirmed that if there is another flood event after mitigation has been put in place, this would be dealt with in the same way as in 2019. RC confirmed that the Applicant would not be changing the flood risk. The waterscape might change but the flood risk and areas covered by any flood event would not change from the existing position. RC confirmed that the Applicant would provide a full response in writing at Deadline 8 in relation to potential changes to the mitigation works proposed in the event of a theoretical contamination event. (Refer to Annex B.5)
- 4.1.26 **Post-hearing written submissions:** these are contained within Annex B and include
- a. Annex B.2 Hearing Action Point 10: Star Dam – Compulsory Acquisition Matters
 - b. Annex B.3 Hearing Action Point 11: Coalhouse Fort – Compulsory Acquisition Matters
 - c. Annex B.4 Hearing Action Point 12: Coalhouse Fort – Provision of wetland mitigation
 - d. Annex B.5 Hearing Action Point 13: Coalhouse Point – Potential land contamination following any future flood event

5 ExA questions on: Mitigation Proposals

5.1 Agenda Item 5a) Nitrogen Deposition and other Woodland Compensation/ Mitigation

Item 5(a)(i) There remain issues with the compensation offered for the Nitrogen Deposition and other woodland compensation/ mitigation. The Applicant is to provide a simple explanation or summary indicating:

- How the land in the Change Application [CR1-001 and 002] at Blue Bell Hill and Burham was originally considered to be necessary and is now considered to be no longer required to be provided elsewhere.
- The amount of Nitrogen Deposition compensation required to offset the project and why there is limited compensation provided in the Kent Downs AONB where the largest effect is said to occur.
- Some of the proposed Nitrogen Deposition and other woodland compensation/mitigation locations have not yet had the benefit of detailed ecological surveys. What measures are proposed to mitigate the impact on the existing habitat and/or species found following the surveys? How is the mitigation secured?

A full description of all the points can be provided in writing at Deadline 8.

- 5.1.1 NC explained that the conclusion of the Applicant's assessment identified that 36 designated sites would be potentially significantly affected by nitrogen deposition, with 29 experiencing residual significant effects. The total combined affected area of these sites measures 176ha. The Applicant's approach to applying the mitigation hierarchy in addressing these significant adverse effects is set out in the Project Air Quality Action Plan [[APP-350](#)]. Where avoidance and mitigation has not been sufficient to reduce these adverse effects, a comprehensive landscape-scale compensation strategy has been proposed based on two key principles:
- a. Creating new wildlife-rich habitats, predominantly woodland and grassland, to provide an area comparable to that of the adversely affected designated sites.
 - b. Positioning these new habitats to link into and connect existing, retained high quality habitats, strengthening and building resilience in the network of habitats at a landscape-scale.

- 5.1.2 NC explained that these two principles are not mutually exclusive. The value of the compensation proposal comes from achieving both in tandem. NC added that new high quality habitats which build resilience in the ecological network, creating isolated pockets of new habitats, or just strengthening existing links into retained habitats would not be sufficient to robustly compensate for the adverse effects of the Project. NC noted that this approach has been developed in discussion with NE and they record their support for it in their SoCG with the Applicant at item 2.1.62 [\[REP7-106\]](#).
- 5.1.3 RC explained that as shown on Plate D.1 [\[REP4-182\]](#), the areas of nitrogen deposition compensation in the Blue Bell Hill and Burham area are there to provide additional connectivity within that ecological network to those sites that were significantly affected. RC explained that in Cossington Field, which is the retained field, there is direct new habitat created between significant large blocks of existing habitat to the west, to the east, to the north and to the south-west. The Reservoir Field to the south-east and the Burham site provide some additional connectivity value and some additional scale value, but in comparison to the core connectivity provided by Cossington Field, they are secondary to that.
- 5.1.4 RC added that the new information received from the landowner of the stewardship scheme showed that the boundary features to the north of the Reservoir Field and the Burham site would add some additional connectivity, irrespective of whether the Project went ahead. RC noted that if the Applicant removed these features from the Order Limits, the remaining land would still achieve the two core objectives, with a comparable area of land overall, providing that additional connectivity at a landscape scale within this ecological network.
- 5.1.5 In response to the ExA's query relating to the stewardship scheme, RC confirmed that the scheme may not continue into the future, explaining that in such a circumstance, the landowner might remove those new hedges. In summary, the Applicant cannot be certain what will happen, and the Applicant does not rely upon connectivity associated with the existing stewardship.
- 5.1.6 In response to the ExA, RC confirmed that the Applicant can confirm that retained fields alone provide sufficient connectivity in line with the Applicant's objectives. The Applicant therefore confirms that if the stewardship reverts, the Applicant will still achieve its connectivity at scale of new habitat that is comparable with the affected area across the Project as a whole.
- 5.1.7 RC explained that the function of the land is for nitrogen deposition compensation. Creating woodland in the AONB serendipitously has a benefit for the AONB but is not the purpose of the compensation. RC added that if the Applicant can achieve its compensation objective with a smaller area of compulsory acquisition, which it believes it can, and that has a secondary benefit to the AONB, this is another matter and not one for the acquisition of this land.
- 5.1.8 RC confirmed that in terms of the extent of the nitrogen deposition compensation south of the river, the Blue Bell Hill site is still the largest area, more than all of the rest of the nitrogen deposition on the south side of the river. RC noted therefore, that there is still a large amount of compensation within the

AONB. The AONB designation is not an ecological designation and as such is not a receptor for nitrogen deposition impacts that the Applicant has assessed, noting that this would not be appropriate for the Applicant to do in any case. RC explained that within the AONB, there are a number of ecological receptors that have been assessed and fully compensated for by the measures proposed. RC added that for those ecological receptors within the AONB, there will be no reduction in resilience and their contribution to the landscape because significant effects on them from nitrogen deposition will be compensated for.

- 5.1.9 RC explained that the site selection process is set out in the Project Air Quality Action Plan [\[APP-350\]](#) and part of that is the cluster analysis which identified four ecological networks that the affected sites were within. The Applicant has, therefore, based its search area on the ecological basis of those clusters, noting that it would be inappropriate to use a landscape-based boundary to constrain an ecological assessment for site selection. RC explained that just because the affected area is in a particular cluster, it does not mean that the compensation area is in the same cluster. The reason for this is that the distribution of woodland on the north side of the river compared to the south side is not equal; there is much more woodland on the south side of the river and these are larger blocks of woodland. To achieve new connectivity between two existing woodlands for example, a larger area would be needed on the north side of the river to connect to more widely distributed areas. A smaller area on the south side provides more connectivity using less additional woodland. RC explained that this is one of the key reasons why there are more areas of new habitat in the north than the south, whilst considering the need to take into account of what land is available without the need for compulsory acquisition.
- 5.1.10 In response to the ExA, RC clarified that any loss of habitat in SSSIs and ancient woodland is covered by a different set of compensation measures.
- 5.1.11 NC explained that the Applicant has undertaken detailed ecological surveys at all sites proposed for nitrogen deposition compensation. These are reported in ES Appendix 8.22: Terrestrial Ecology Surveys at Nitrogen Deposition Compensation Sites [\[APP-418\]](#). Detailed ecological surveys were undertaken at all but two of the nine sites proposed for ancient woodland compensation. NC explained that the two sites where surveys were not possible due to land access constraints are Plots 46-27 and 45-61 at Folkes Farm, west of the M25 junction 29, and land immediately north of Randall Wood, at Plots 10-01 and 11-77. NC noted that the lack of detailed survey information at the Folkes Farm site was addressed in CAH2 Action 5 Response Folkes Farm – Glenroy Estates [\[REP5-081\]](#). The land immediately north of Randall Wood has been assessed via aerial imagery as arable land, as reported in ES Appendix 8.2: Plants and Habitats [\[APP-391\]](#) and ES Figure 8.2 [\[APP-263\]](#). This has been confirmed by ground truthing from the adjacent Shorne Woods.
- 5.1.12 NC continued to explain that the absence of detailed species survey information at both sites is not considered a constraint to the design of the compensation sites. The draft DCO [\[REP7-090\]](#) secures pre-construction protected species surveys as well as the initiation of discussions with NE should anything outside the current assessment be recorded. Any semi-natural habitat present at the compensation sites would be retained as beneficial to the establishment of high

quality woodland and wildlife-rich habitats as detailed in Sections 8.24 and 8.29 in the outline Landscape and Ecology Management Plan [REP7-132]. NC noted that the design of these sites also allows sufficient flexibility to avoid any key ecological features such as badger setts but avoiding disturbing activities such as tree planting in close proximity to them, instead supporting natural regeneration of habitats around such a feature.

- 5.1.13 In response to submissions made by IPs, RC clarified that the Applicant is not compensating for designated sites in Kent, in Essex. The Applicant is compensating for affected sites in each of the four clusters identified. RC added that to achieve the same level of connectivity and therefore additional resilience to offset or compensate for the loss of resilience from nitrogen deposition degradation in each of the four clusters, these clusters each have nitrogen deposition compensation sites. RC reiterated that in the north these need to be larger to achieve the same level of additional connectivity, so the Applicant is not compensating for Kent, in Essex.
- 5.1.14 In terms of the proximity issue raised, RC explained that Defra guidance states that there is a preference to provide compensation as close as possible to the impact, unless a landscape scale approach provides additional benefits. RC noted that the Applicant has set this out in the Project Air Quality Action Plan [APP-350] and when considering the site selection, the Applicant considers site proximity and the caveat within the Defra guidance to explain why the landscape scale approach was chosen over, for example, a site-by-site approach. RC added that the connectivity is provided in each of the clusters in each of the affected networks. Designated sites are at different levels of designation, and designated habitats in terms of ancient woodland but the designation shows a level of quality of those particular ecological networks and is not limited to a boundary that has been put on it. RC added that any designated site or habitat lies within a network comprising numerous different patches of habitat, some designated and some not. RC explained that these are all semi-natural habitats that help build the resilience of all of the patches by being a part of the network and by building connectivity, adding that this is how compensation of the reduction in resilience is achieved, whether that comprises a designated site at a national level, a designated habitat such as ancient woodland, or a local wildlife site.
- 5.1.15 AT added that there is a SoCG with NE at an advanced stage with clear support for the principles, confirming that the Applicant would submit its position in writing (refer to Annex C.2).
- 5.1.16 **Post-hearing written submissions:** these are contained within Annex C and include
- a. Annex C.2 Hearing Action Point 16: Nitrogen deposition compensation – spatial relationship between impact and compensation
 - b. Annex C.3 Hearing Action Point 18: RIES and nitrogen deposition matters.

6 ExA questions on: Potentially Contaminated Land

6.1 Agenda Item 6a) Southern Valley Golf Course

Item 6(a)(i) In its response to ExQ2 [REP6-131], Gravesham Borough Council indicated that there may have been historic use of potentially contaminated material within the Southern Valley Golf Course. To what extent has this been investigated and what remediation measures would be secured in view of the proposed use of this site.

- 6.1.1 SC explained that Southern Valley Golf Course is identified in ES Chapter 10: Geology and Soils [[APP-148](#)] and supporting appendices ES Appendix 10.6: Preliminary Risk Assessment [[APP-427](#)], ES Appendix 10.9: Generic Quantitative Risk Assessment Report for the Phase 2 Investigation (1 of 3) [[APP-430](#)] and ES Appendix 10.11: Remediation Options Appraisal and Outline Remediation Strategy [[REP1-165](#)]. It is referenced as potential source of contamination HLU0324 for which desk based assessment, ground investigation and risk assessment was completed.
- 6.1.2 SC noted that construction of the Southern Valley Golf Course started in 1998. It is located in the north-east of the former Gravesend Airport (which is referenced as HLU0321, HLU0213 and HLU0313 in the Preliminary Risk Assessment). The Applicant understands that material was imported onto the Southern Valley Golf Course for landscaping fill and given lack of documentary evidence available, conservatively assumed that materials of unknown quality may have been imported. SC explained that the Generic Quantitative Risk Assessment Report for the Phase 2 Investigation [[APP-430](#)] Figure B shows the ground investigation that has been undertaken at the Southern Valley Golf Course, which comprised 35 exploratory hole locations, noting that made ground of generally up to 1 metre thickness, locally 2.9 metres thick was encountered overlying head deposits, further overlying the chalk formation. SC explained that 140 collected samples were analysed and exceedances in limited locations were detected of lead (one of 140 samples) and polyaromatic hydrocarbons (six of 140 samples); these were mainly from the made ground. SC added that these were assessed against a conservative assessment criteria for a public open space.
- 6.1.3 SC explained that asbestos was identified in four of the 140 samples and of those four, where quantification was undertaken, they were below the limit of detection of 0.001%. To summarise, SC noted that no evidence of significant material importation nor contamination has been identified through the findings of that ground investigation.
- 6.1.4 SC noted that the end use of Southern Valley Golf Course would be the road in cutting as it approaches the South Portal with surrounding grassland areas proposed. SC added that the Southern Valley Golf Course has been assessed as a medium risk site, taking into account the earthworks proposed, and as

such it has been taken forward into the Remediation Options Appraisal and Outline Remediation Strategy [REP1-165]. SC explained that this report concludes that the most feasible remediation option for the Project is a combination of containment, excavation and disposal where needed. SC noted that the specific measures for remediation will be determined by the site specific remediation strategy to be developed at detailed design, as secured by REAC commitment GS027. SC explained that in order to support the development of the site-specific remediation strategy, supplementary investigation of the Southern Valley Golf Course will be undertaken, secured by REAC commitment GS001, noting that GBC will be consulted throughout this process. SC added that this follows the process contained within the EA Land Contamination: Risk Management (LCRM) guidance (Environment Agency, 2021) and that materials management will be controlled by a materials management plan, in accordance with the Definition of Waste: Development Industry Code of Practice (CL:AIRE, 2011).

- 6.1.5 SC further explained that all excavated materials and soils that are proposed for reuse under this materials management plan will be required to meet risk-based acceptability criteria applicable to its intended use to ensure they are suitable for use, and this is secured by REAC commitments GS006 and MW007. Overall, the position analysed for the Project in the ES and supporting appendices follows the LCRM guidance. SC noted that LCRM guidance recommends a tiered approach in stages, with site-specific evidence required at each level. By adopting the LCRM guidance, SC explained, the position analysed in the ES and its supporting appendices provides a proportionate and appropriate assessment of land contamination risk. The Applicant notes the EA's satisfaction with the Applicant's approach to land contamination, as noted in the EA's response to ExQ2, Question 6.1.2 [REP6-124]. The Applicant notes that the EA states that land contamination risk assessment and management is an iterative process with subsequent phases being more detailed than the last, acknowledging that further detailed investigation will be required, which is a standard risk assessment practice for large and small-scale projects.
- 6.1.6 In response to GBC's submission, AT confirmed that the Applicant would respond in writing in relation to the open space land at the golf course to be handed back to GBC.
- 6.1.7 **Post-hearing written submissions:** these are contained within Annex D and include
- a. Annex D.2 Hearing Action Point 19: Southern Valley Golf Course.

7 Next Steps and Closing

7.1.1 The Applicant did not make any submissions under this Agenda Item.

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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.
Highways England		Former name of National Highways.
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 Planning Policy Framework	NPPF	A framework published in March 2012 by the UK's Department of Communities and Local Government, consolidating previously issued documents called Planning Policy Statements (PPS) and Planning Practice Guidance Notes (PPG) for use in England. The NPPF was updated in February 2019 and again in July 2021 by the Ministry of Housing, Communities and Local Government.
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.

Term	Abbreviation	Explanation
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.
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 Kent Downs Area of Outstanding Natural Beauty (AONB) and Wider Landscape Matters

A.1 Introduction

A.1.1 This section provides the post-hearing submissions for Agenda Item 3 Kent Downs Area of Outstanding Natural Beauty (AONB) and Wider Landscape Matters, from Issue Specific Hearing 11 (ISH11) on 22 November 2023 for the A122 Lower Thames Crossing (the Project).

A.2 Hearing Action Point 1: The Levelling-up and Regeneration Act 2023 (LURA) – section 245 (5) & (6)(a)

A.2.1 Hearing Action Point 1 requests: “Section 245 (5) & (6)(a) of LURA, will amend the Countryside and Rights of Way Act 2000 in respect of the “general duty” imposed on Public Bodies dealing with functions in an AONB. Please provide a commentary on the effect of this for the Development and the assessments which have been submitted. In addition, provide a view as to the effect of the new “general duty” on the policy framework in the NNNPS (paragraphs 5.150 - 5.153). In particular, please consider the use of the wording “where possible” in the Policy and “must seek” in LURA. Please set out reasons for conclusions that the amended “general duty” does or does not affect the application of policy. Other IPs may respond by D9”. The Applicant’s response is below.

A.2.2 As noted in Hearing Action Point 1, section 245 of LURA will amend section 85 of the Countryside and Rights of Way Act 2000 (CROW). Currently section 85(1) provides that: “*In exercising or performing any functions in relation to, or so as to affect, land in an area of outstanding natural beauty, a relevant authority shall **have regard to** the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty*”.

A.2.3 Effective from 26 December 2023, the relevant provision in England will become section 85(A1) and will read: “*In exercising or performing any functions in relation to, or so as to affect, land in an area of outstanding natural beauty in England, a relevant authority other than a devolved Welsh authority must **seek to further** the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty*”.

A.2.4 The Applicant acknowledges that this amendment will strengthen the obligation under section 85 of CROW on “relevant authorities”, the definition of which applies both to National Highways and to the Secretary of State as decision-maker on the DCO application. As far as the Applicant is aware, no explanatory

notes have yet been published to accompany LURA. Furthermore, the LURA amendments to section 85 will empower the Secretary of State to make regulations about how a relevant authority is to comply with the revised duty under section 85(A1). As such there is limited information at this stage about how the revised duty is intended to be implemented. The following paragraphs set out the Applicant's analysis in response to Hearing Action Point 1, expanding upon the preliminary comments made by the Applicant on this matter at ISH11.

- A.2.5 Whilst strengthening the section 85 duty, the Applicant makes the following observations about the effect of this amendment in the context of a Nationally Significant Infrastructure Project (NSIP) such as the Project:
- a. It is notable that the revised duty is not limited to functions related to planning – the section 85 duty is of general application to all functions (i.e. including those outside of the planning sphere) exercised by a relevant authority in relation to an AONB.
 - b. This is important because the Applicant considers the LURA amendment to section 85 effectively brings non-planning functions into line with planning policies which already have the equivalent effect in relation to development in AONBs, such as National Policy Statements and the National Planning Policy Framework. (Noting the Examining Authority's question, this matter is expanded upon further below in relation to paragraphs 5.150–5.153 of the NPSNN.)
 - c. It should be recognised that the section 85 amendment is not outcome-based. The Applicant's view of the practical application of "*seek to further*" therefore is that a relevant authority must, when exercising a function, look for opportunities to further the conservation and enhancement of AONBs, insofar as is possible.
 - d. What is possible must be read in context of the function being exercised. Functions in relation to NSIPs are set out in the Planning Act 2008 (the 2008 Act), which provides that consent may be granted where a proposal is compliant with the relevant National Policy Statement and its adverse impacts are outweighed by its benefits. That regime permits development which has adverse effects on the natural beauty of AONBs. Plainly the LURA does not amend these components of the 2008 Act regime. As a matter of statutory interpretation therefore, it should be assumed that Parliament's intent is that the amended section 85 duty can be complied with where an NSIP results in adverse effects in an AONB.

A.2.6 Turning specifically to the application of the new section 85 duty to the relevant policy framework in the NPSNN, the table below provides an analysis of paragraphs 5.150 to 5.153.

Table A.1 Analysis of NPSNN Paragraphs 5.150 to 5.153

NPSNN paragraph and summary of application to AONBs	Effect of new section 85 duty on paragraph
<p>Paragraph 5.150 – which provides that great weight should be given to conserving landscape and scenic beauty in nationally designated areas such as AONBs, which have the highest status of protection in relation to landscape and scenic beauty. Designated areas have specific statutory purposes which help ensure their continued protection and which the Secretary of State has a statutory duty to have regard to in decisions.</p>	<p>Paragraph 5.150 references statutory purposes for the protection of designated areas to which the Secretary of State has a duty to “<i>have regard</i>”. As noted above, that duty will change to “<i>seek to further</i>” in the context of AONBs. However, paragraph 5.150 already requires “<i>great weight</i>” to be attached to conserving landscape and scenic beauty, which have the “<i>highest status of protection</i>”. Accordingly, the Applicant does not consider the LURA amendment to section 85 materially changes the effect of paragraph 5.150.</p>
<p>Paragraph 5.151 – which provides that the Secretary of State should refuse development consent in AONBs except in exceptional circumstances and where it can be demonstrated that it is in the public interest, considering such matters as need, alternatives and the detrimental impact on the environment and the landscape, and the extent to which that could be moderated.</p>	<p>Paragraph 5.151 establishes a rebuttable presumption against development in an AONB – a high level of protection – and requires the Secretary of State to have regard to the existence of alternatives which would avoid impact on an AONB, and where not avoidable the acceptability of mitigation and compensation measures proposed to reduce or offset that impact. The Applicant’s view is that this balancing exercise is consistent with the duty to “<i>seek to further</i>” the purpose of conserving and enhancing the natural beauty of an AONB when exercising a planning function which permits, in principle, development which may result in adverse effects in an AONB.</p>
<p>Paragraph 5.152 – which establishes that there is a strong presumption against any significant road widening in an AONB, unless it can be shown there are compelling reasons for the new or enhanced capacity and with any benefits outweighing the costs very significantly.</p>	<p>The analysis above in relation to paragraph 5.151 applies in the same way to paragraph 5.152, noting that paragraph 5.152 applies specifically to road widening in an AONB.</p>
<p>Paragraph 5.153 – which provides that where consent is given in AONBs, the Secretary of State should be satisfied that the applicant has ensured that the project will be carried out to high</p>	<p>The Applicant considers that paragraph 5.153 is consistent with the revised section 85 duty. It is clear that development in AONBs must satisfy a more stringent test – “<i>high environmental</i>”</p>

NPSNN paragraph and summary of application to AONBs	Effect of new section 85 duty on paragraph
<p>environmental standards and “where possible” includes measures to enhance other aspects of the environment. Where necessary, the Secretary of State should consider the imposition of appropriate requirements to ensure these standards are delivered.</p>	<p><i>standards</i>”. Furthermore, as noted above, the Applicant’s view of the practical application of “<i>seek to further</i>” is that a relevant authority must, when exercising a function, look for opportunities to further the conservation and enhancement of AONBs, insofar as is possible in the context of the function being exercised. The Applicant considers that this is consistent with the existing “<i>where possible</i>” test in paragraph 5.153.</p>

A.2.7 For the reasons set out in the table above, the Applicant’s conclusion is that paragraphs 5.130 to 5.153 – which must be read and applied in their *totality*, not as individual components – have a combined effect and outcome that is consistent with the LURA amendment to section 85 of CROW. It follows that, in the Applicant’s view, the LURA amendment has no material effect on the existing assessments contained in the Environmental Statement and Planning Statement.

A.2.8 For completeness and the avoidance of doubt, the Applicant’s case is that the Project complies with paragraphs 5.130 to 5.153 of the NPSNN, and by extension will be compliant with section 85 of the CROW as amended. This is set out in full in Planning Statement Appendix F [[APP-501](#)], but in summary:

- a. The Applicant has considered alternatives to avoiding development in, or harm to, the AONB but such alternatives do not meet the Scheme Objectives.
- b. The Applicant has included in the Project design a raft of measures which have the effect of mitigating impacts on the AONB where possible, as well as providing enhancements – these include woodland planting on a landscape scale, green bridges and the enhancement of the walking, cycling and horse riding networks in the AONB.
- c. The Applicant has reached agreement with the AONB Unit to provide a fund of £4.24 million to enable compensatory enhancements to other aspects of the environment in the AONB.

A.3 Hearing Action Point 2: Local Landscape Character Area boundaries

A.3.1 Hearing Action Point 2 requests: “Provide clarity as to any adjustments which were made to Local Landscape Character Area/ Sub Area boundaries in

respect of the assessments prepared for the 2020 Application and the current application. If any changes were made in 2020 and/or 2023, please set out detailed reasons for this". The Applicant's response is below.

- A.3.2 A different Local Landscape Character Area (LLCA) boundary between the West Kent Downs (sub area Cobham) and West Kent Downs (sub area Shorne) LLCAs to that of the published Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) was shown on Environmental Statement (ES) Figure 7.2: Local Landscape Character Areas [[APP-198](#)] in the withdrawn 2020 Development Consent Order (DCO) application.
- A.3.3 A small change to the east of the LLCA boundary between the West Kent Downs (sub area Cobham) and West Kent Downs (sub area Shorne) LLCAs was made on ES Figure 7.2 [[APP-198](#)] between the withdrawn 2020 DCO application and the 2022 DCO application.
- A.3.4 There was a change in the Project landscape architects between the withdrawn 2020 DCO application and the 2022 DCO application and the reasons for changing the boundary between the West Kent Downs (sub area Cobham) and West Kent Downs (sub area Shorne) LLCAs from the published boundary in the Kent Downs AONB Landscape Character Assessment Update 2020 are not known. However, the boundaries defining the LLCAs on ES Figure 7.2 [[APP-198](#)] were reviewed prior to the DCO application in 2022 as part of a general professional due diligence review. As a result of this review, one small part of the boundary between the LLCA sub areas of Shorne and Cobham shown on ES Figure 7.2 [[APP-198](#)] was adjusted for the reason explained below (in the final paragraph of Hearing Action Point 2). This was the only change made to the boundary between the two LLCA sub areas on ES Figure 7.2 between the 2020 and 2022 DCO applications.
- A.3.5 During the review of LLCA boundaries, it was considered that the HS1 corridor and associated planting formed the most appropriate boundary between the LLCA sub areas. It became apparent during field work when walking within Cobham Hall Registered Park and Garden that the A2 and HS1 corridors were largely obscured by woodland and that the transport infrastructure corridor was considered to be separate from the LLCA. Conversely, the A2 corridor and parts of the HS1 corridor appeared to be more prominent from the southern fringes of Shorne Woods Country Park. The transport infrastructure corridor therefore appears to sit best wholly within the Shorne sub area, not split between two character areas, given the strong landscape boundary along the HS1 corridor on the northern margin of the Cobham sub area.
- A.3.6 The LLCA sub area boundary deviates from the HS1 corridor at Brewers Road, where the HS1 corridor is partially within tunnel. The woodland belt adjoining

Cobham Hall Registered Park and Garden along Brewers Road forms a logical boundary at this point. It contains the parkland within the Cobham sub area and the A2 junction with Brewers Road/Halfpence Lane with the rest of the A2 corridor in the Shorne sub area.

- A.3.7 Where the LLCA sub area boundary deviates from the HS1 corridor near the urban area of Strood, the narrow corridor between HS1 and Strood is densely wooded and is of a similar character to the woodland south-west of the HS1 corridor. The Applicant therefore considers the woodland between HS1 and Strood to sit better within the Cobham LLCA sub area. However, following the due diligence review between the withdrawn 2020 DCO application and the 2022 DCO application, one small change to this landscape character area boundary was made so that it followed the northern edge of the woodland between the HS1 corridor and Strood rather than an indistinct boundary.

A.4 Hearing Action Point 3: Assessment of significance – AONB character areas

- A.4.1 Hearing Action Point 3 requests: *“Provide more information on the design re-evaluation/assessment of significance in respect of the changes made between the 2020 application and the current application. Please specify the design changes and how these informed the re-grading of the impact of the scheme”*. The Applicant’s response is below.
- A.4.2 As explained in the response to question ExQ2_Q12.2.1 in Responses to the Examining Authority's ExQ2 Appendix H – 12 Physical Effects of Development & Operation [[REP6-115](#)], following withdrawal of the October 2020 DCO application, a thorough review of the Environmental Statement was undertaken in conjunction with the revised Project design. This included a review of the landscape and visual impact assessment in ES Chapter 7 Landscape and Visual [[APP-145](#)].
- A.4.3 As a result of this review, several updates were made to the landscape and visual impact assessment in the ES submitted as part of the DCO application withdrawn in 2020. As explained at Issue Specific Hearing 11, the updates were not made solely in response to Project design changes. The changes to the assessment stem from one or more of the following factors:
- d. Changes to Project design (principally changes to proposed utilities diversions, resulting in a reduction in the worst-case assumptions on extent of vegetation removal required to facilitate the Project, and widening of Thong Lane green bridge south from approximately 30m to 40m overall width).

- e. Changes to the assessment of sensitivity for certain receptors, which has resulted in some ‘knock-on’ changes to significance levels when combining the sensitivity of the receptor with magnitude of effect. (Refer to the Applicant’s response to ExQ2_Q12.2.1 in Responses to the Examining Authority’s ExQ2 Appendix H – 12 Physical Effects of Development & Operation [[REP6-115](#)] for further details in relation to re-evaluation of the sensitivity of the West Kent Downs sub area Cobham Local Landscape Character Area (LLCA) since 2020.)
- f. Review of the significance matrix in Table 3.8.1 of Design Manual for Roads and Bridges LA 104 Environmental Assessment and Monitoring (LA 104) (Highways England, 2020a) and the justification for significance levels where the matrix allows a choice of two significance categories for certain combinations of the sensitivity of receptor and the magnitude of effect. (This assessment step was not made explicit in the version of ES Chapter 7: Landscape and Visual submitted with the DCO application withdrawn in 2020 but is explicit in the current ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)]). An extract from Table 3.8.1 in LA 104 is included below for ease of reference; Paragraph 3.8.1 states that:

‘Where Table 3.8.1 includes two significance categories, evidence should be provided to support the reporting of a single significance category.’

Table 3.8.1 Significance Matrix

		Magnitude of impact (degree of change)				
		No change	Negligible	Minor	Moderate	Major
Environmental value (sensitivity)	Very high	Neutral	Slight	Moderate or large	Large or very large	Very large
	High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
	Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
	Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
	Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

- g. Validation of the assessment by the current Project landscape architects for reasons of professional due diligence and to ensure that the assessment presented in the current DCO application represents a realistic worst case.

A.4.4 Appendix A sets out a comparison of the landscape impact assessments for the West Kent Downs sub area Cobham and sub area Shorne LLCAs in the DCO application withdrawn in 2020 with that of the current DCO application and the reasons for the differences.

- A.4.5 For the overarching West Kent Downs Landscape Character Area (LCA) 1A (which includes the LLCAs sub areas of Shorne and Cobham), there is no difference in the significance of effects assessed in both applications, either during construction or the opening year. However, the assessment in the current DCO application is for a moderate adverse significance of effect compared with a large adverse significance of effect in the withdrawn DCO application. In terms of the significance matrix in Table 3.8.1 of Design Manual for Roads and Bridges LA 104, the significance of effect has been assessed as moderate rather than large due to the localised and contained nature of effects.
- A.4.6 The landscape and visual impact assessment commentaries in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)] and ES Appendix 7.10: Schedule of Visual Effects [[APP-385](#)] were extensively updated since 2020 and the current assessments are fully detailed and transparent and should therefore be read on their own merits in conjunction with the current DCO application, rather than by comparison with any superseded assessments.

A.5 Hearing Action Point 4: Kent Downs AONB landscape impact assessment

- A.5.1 Hearing Action Point 4 requests: “*On a without prejudice basis, provide an assessment using the published Kent Downs AONB Unit landscape character area/sub areas boundaries in addition to the assessment already provided by the Applicant using adjusted boundaries. In addition, you may provide a commentary with reasoning setting out whether or not you consider that this alternative assessment could/should be adopted by the ExA. Other IPs can respond at D9*”. The Applicant’s response is below.
- A.5.2 The published Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) shows the landscape character area boundary that subdivides the two sub areas of the overarching West Kent Downs LCA 1A (the sub areas Cobham and Shorne LLCAs), following the central reservation of the M2/A2 corridor.
- A.5.3 If the assessment were to be based on the published LLCAs boundary, the sensitivity of the West Kent Downs (sub area Cobham) LLCAs would be assessed as very high rather than high as in the current ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)], on account of the increased susceptibility to change on the northern margin of the LLCAs between the HS1 and A2 corridors. Based on the published LLCAs boundary, there would be a greater significance of landscape effect on the landscape character of the sub area Cobham LLCAs, due to a greater proportion of the Project being located within the LLCAs. However, the increased significance level would only apply to the area between the HS1 corridor and the A2 central reservation. The

significance of effect to the south of the strong landscape boundary provided by retained vegetation along the HS1 corridor would remain unchanged.

- A.5.4 In summary, the significance of effect levels based on the published sub area Cobham boundary would be assessed as:
- h. Large adverse during construction rather than moderate adverse
 - i. Large adverse in the opening year (winter) rather than slight adverse
 - j. Moderate adverse in the design year (summer) rather than slight adverse
- A.5.5 Conversely, the significance of effect levels based on the published sub area Shorne LLCA would be assessed as large during construction rather than very large as in the current ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)], due to the reduced extent of construction activity within the LLCA. The significance of effect levels during the opening year (winter) and the design year (summer) would not change from those stated in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)], which are large adverse and moderate adverse respectively.
- A.5.6 Effects on the overarching West Kent Downs LCA 1A would not change when using the published landscape character area boundary in the Kent Downs AONB Landscape Character Assessment Update 2020, even though there would be an increase in the significance of effects on the West Kent Downs (sub area Cobham) LLCA and a reduction in the significance of effects on the West Kent Downs (sub area Shorne) LLCA. This is because the same effects have been assessed overall. Furthermore, the individual assessments for the sub areas of Cobham and Shorne would not exceed the significance of effect levels stated for the overarching West Kent Downs LCA 1A in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)].
- A.5.7 Appendix B provides updated assessment tables for the West Kent Downs (sub area Cobham) and West Kent Downs (sub area Shorne) LLCAs, based on the published landscape character area boundary from the Kent Downs AONB Landscape Character Assessment Update 2020 and using the format in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)].
- A.5.8 The Applicant does not consider that the alternative assessment in Appendix B should be adopted. This is because the Applicant considers the LLCA boundary between the Cobham and Shorne LLCA sub areas shown on ES Figure 7.2 [[APP-198](#)] to be the most appropriate boundary, as discussed in Hearing Action Point 2 above, with further information provided in its response to Gravesham Borough Council's Local Impact Report [[REP2-058](#)] (page 127) and to Kent Downs AONB Unit's Written Representation [[REP2-046](#)] (page 56). The Applicant also notes that using the published landscape character area

boundary in the Kent Downs AONB Landscape Character Assessment Update 2020, which follows the central reservation of the A2, introduces an element of double counting to the assessment in that the loss of the existing tree belt in the central reservation is assessed in both the Cobham and Shorne LLCA sub areas.

A.6 Hearing Action Point 6: Photomontages of Green Bridges within the Kent Downs AONB

- A.6.1 Hearing Action Point 6 requests: “*Applicant and Natural England to discuss the possibility of the Applicant providing additional photomontages/representative viewpoints showing the Green Bridges as they would be seen from the wider landscape. To include the consideration of whether ‘side-on’ perspectives also ought to be provided. Applicant to provide an update at D8 and, if additional photomontages are to be provided, the Applicant to provide these at D9. Natural England, and other IPs, can then provide final comments at D10*”. The Applicant’s response is below.
- A.6.2 There would be very few views of the two green bridges proposed within the Kent Downs AONB, Brewers Road green bridge and Thong Lane green bridge south, from the wider landscape. This is because existing woodland to the north and south of the proposed green bridges would curtail most views. To the north-west of Thong Lane green bridge south, views would be largely curtailed by the proposed M2/A2/A122 Lower Thames Crossing junction. The Applicant does not therefore consider additional photomontages showing the green bridges from Representative Viewpoints to be practical or necessary. It is, however, noted that the current photomontages from Representative Viewpoints S-18 and S-20a in ES Figure 7.19: Photomontages Winter Year 1 and Summer Year 15 (1 of 4) [[REP6-036](#)] already provide visualisations of Thong Lane green bridge south from the local landscape and wider landscape respectively.
- A.6.3 The Applicant met with Natural England on 24 November 2023. Natural England confirmed that they would not be requesting additional photomontages from Representative Viewpoints showing the green bridges from the wider landscape. This was confirmed in correspondence on the 29 November 2023.

A.7 Hearing Action Point 7: Width of the Green Bridges

- A.7.1 Hearing Action Point 7 requests: “*Please provide a supplement to the response at [[REP4-182](#)], giving a commentary as to the feasibility of any scope to widen the Green Bridges which would not significantly alter the linear extent of the structures*”. The Applicant’s response is below.

- A.7.2 The Applicant has considered the request regarding the possibility to widen green bridges within the limits of deviation (LOD) for the current highways alignment. Key considerations included within this review are:
- k. Constraints associated with existing Project Order Limits, areas of permanent land-take and LOD associated with the horizontal and vertical alignments of both the bridge and highways structures that they cross (e.g. the A2 mainline, on and off slips, local connector roads)
 - l. Requirement to align with utility diversions and associated LODs for these works, particularly where they are immediately adjacent to or are located within green bridge structures (e.g. there are significant utility diversion requirements on both sides of the A2 corridor)
 - m. Proximity of designated sites and habitats (e.g. Shorne and Ashenbank Woods SSSI, areas of ancient woodland, grade II* Registered Park and Garden) and third-party assets and associated infrastructure (e.g. HS1)
 - n. Programme implications – specifically relating to durations for local road closures and online contraflow for the A2 corridor
 - o. Value for money benefits associated with any further widening
- A.7.3 It is acknowledged that the A2/M2/HS1 corridor currently fragments habitats through this section of the Kent Downs AONB and that this is in part mitigated through the retention of a section of wooded central reserve that predominantly lies between Brewers Road and Park Pale overbridges and HS1 landscape planting along the southern boundary of the A2. However, there are currently no green links that span the width of the A2 corridor to connect habitats north of the A2 to habitats south of the HS1 corridor, which is what the two replacement green bridges are seeking to address.
- A.7.4 Best practice guidance on the design for green bridges (Green Bridges: A literature review (NECR181) (Natural England, 2015) and Green Bridges Technical Guidance Note (Landscape Institute, 2015)) define green bridges as *'An artificial structure over road or rail infrastructure which is either vegetated or provides some wildlife function'*. The guidance on design recommends that the shape of the bridge structure is either an 'hourglass' design (with widened approaches) or, where this is not possible, that landscape planting and fencing is used to 'guide' animals onto the approach for the bridge structures. Whilst it is possible to widen the central section of a bridge (e.g. to create an inverse hourglass) this merely serves to exacerbate pinch points on the approaches from a landscape and ecological perspective. Further widening adds complexity to the design (e.g. longer piers or additional support columns that would need to be designed to allow for impact loading), which would extend the programme

for construction and thus impact on the local road closure as well as the traffic management required to safely manage construction next to live traffic on the A2 mainline.

- A.7.5 As discussed in ISH6 [\[EV-045f\]](#), opportunities for widening bridges without requiring amendments to existing Order Limits and areas of permanent land-take are limited due to the presence of designated and/or ancient woodland north and south of the A2 corridor. Conversely by trying to avoid designated sites new impacts may affect landowners (e.g. the Nook Pet Hotel, the Inn on the Lake) where efforts have been made to reduce or avoid land-take by reducing the Order Limits in these locations. Any widening of the approaches also has the potential to be exacerbated through the requirement to divert associated utilities that either run parallel to the highway structure and bridge abutments or which require diversion across the new green bridge structures or are restricted by other third party assets, where minimum working areas are required for their ongoing maintenance (e.g. the HS1 green bridge and tunnels south of the A2).
- A.7.6 The best practice guidance Green Bridges: A literature review (NECR181) (Natural England, 2015) acknowledges that the majority of green bridge structures are those that have been constructed ‘offline’ to address new areas of severance or fragmentation resulting from projects. As noted during the desk study for the assessment ‘*No examples in the literature were found with respect to specific approaches or designs for retrofitting existing grey bridges*’ where, by necessity, construction is constrained by the ‘live’ transport networks beneath the existing structures that are either requiring replacement or modification.
- A.7.7 The Applicant identified the potential to provide green links via the replacement Thong Lane south and Brewers Road bridges, at early stages of design development. These existing road bridges require replacement in order to span the widened transport corridor which is a span of ca. 158m for Thong Lane green bridge south and ca.100m for Brewers Road green bridge. During the design development the Applicant has consulted with stakeholders and has responded to requests by Gravesham Borough Council by agreeing to widen Thong Lane green bridge south to 40m, increasing the planting area from 10m to 20m; see item 2.1.21 in the Statement of Common Ground [\[REP6-024\]](#).
- A.7.8 Opportunities for further widening are constrained, as noted above. In particular, Brewers Road Bridge, which provides direct access to the Shorne Woods Country Park, and which is currently anticipated to be closed for 16–19 months based on a reasonable worst case for the current green bridge design. This remains a matter under discussion between Kent County Council and the Applicant – see item 2.1.32 in the Statement of Common Ground [\[REP7-112\]](#) – and Gravesham Borough Council and the Applicant – see item 2.1.72 in the

Statement of Common Ground [REP6-024]. Further widening, even just centrally – to avoid impacts associated with widening the approaches, would impact on the construction programme and would extend the period of road closure for the Brewers Road green bridge. This coupled with inevitable knock-on for traffic management on the A2 mainline means the cost benefit for relatively modest gain, which does not overcome the issue of the pinch points on the approaches to the structures, is not considered justified.

- A.7.9 Currently, the alignment of Thong Lane green bridge south is offset from the existing Thong Lane bridge over the A2, thereby allowing Thong Lane to remain open during the construction of the new green bridge. The extent of widening on Thong Lane green bridge south to the west is restricted by the slip roads that link to the Darnley Lodge Lane two-way local connector road which are elevated compared to the mainline and so it would be challenging to achieve sufficient clearance with a widened structure by extending further west. If the bridge were realigned further east this could require changes to major utility diversions and ultimately closure of the existing Thong Lane bridge over the A2, for the duration of the construction (likely to be of a similar duration for Brewers Road green bridge, i.e. 16–19 months). It is for these reasons that the Applicant has not sought to further widen these structures, which are seeking to address the widening resulting from the Project and historic severance caused by the A2 transport corridor more generally.

A.8 Gravesham Borough Council request to Heads of Terms in relation to Kent Downs AONB Compensatory Enhancement Fund

- A.8.1 The Applicant would like to signpost Gravesham Borough Council to the Draft Section 106 Agreement – Kent County Council [REP7-176] which contains the requested details.

Annex B Post-hearing submission on Agenda Item 4 Coalhouse Fort and Point

B.1 Introduction

B.1.1 This section provides the post-hearing submissions for Agenda Item 4 Coalhouse Fort and Point, from ISH11 on 22 November 2023 for the Project.

B.2 Hearing Action Point 10: Star Dam – Compulsory Acquisition matters

B.2.1 Hearing Action Point 10 requests: “Provide commentary in respect of the distribution of temporary possession/ permanent acquisition at Star Dam. In addition, provide details of the future maintenance of the structure, for example will the Environment Agency (EA) continue to retain maintenance responsibility for the structure and retain appropriate access for such a purpose”. The Applicant’s response is below.

B.2.2 The distribution of temporary possession and permanent acquisition at Star Dam (Plots 19-25, 19-24 and 19-18 *et al.*) indicates that the northern section of the dam would overlap with land indicated to be permanently acquired. The overlap reflects the standard limits of deviation applied for the construction and improvement of public rights of way, within which the detail design of the route would ultimately be located.

B.2.3 Whilst the dam structure itself is legally owned by the freeholder upon whose land it is affixed (in this case (1) the Mott Family and (2) Exel Logistics Property Ltd), the Environment Agency has rights under section 165 of the Water Resources Act 1991 (s165 WRA 1991) to access, operate, maintain, replace and/or raise the dam.

B.2.4 The Applicant has no works planned for the dam structure itself and so in order to resolve the overlap, the Applicant will enter into a Stakeholder Actions and Commitments Register (SAC-R) commitment that compulsory purchase powers for permanent acquisition over the dam structure will not be implemented.

B.2.5 So as to avoid the dam, the SAC-R commitment would specify the area within which the Applicant’s works and land powers would not be exercised; it would also confirm that the Applicant’s works in this area would have no material impact on the Environment Agency’s ability to operate and maintain the dam under s165 WRA 1991.

B.2.6 The SAC-R commitment will also commit the Applicant to provide access at all times throughout the construction period to enable the Environment Agency to

access through the Applicant's temporary possession land (if necessary) to maintain and/or carry out such other works to the dam structure as may be necessary.

B.3 Hearing Action Point 11: Coalhouse Fort – Compulsory Acquisition matters

- B.3.1 Hearing Action Point 11 requests: “*On the understanding that the wetland mitigation provision at Coalhouse Fort is provided as part of the Preliminary Works, what would the Applicant's position be should the Main Works for the development not subsequently proceed for currently unforeseen reasons. Could/would the land be returned to its previous condition and offered to be returned to the landowner, or would it be retained by the Applicant and be a matter for compensation. Mr Holland (on behalf of the Mott family) may respond at D9*”. The Applicant's response is below.
- B.3.2 The Applicant has reviewed the response to the question posed by the Examining Authority in relation to the definition of the Coalhouse Point wetland mitigation creation as a preliminary work. Contrary to the mistaken assertion during ISH11, the works at Coalhouse Point would not in fact fall within the definition of preliminary works as detailed within the Preliminary Works Code of Construction Practice (CoCP) [\[REP6-042\]](#). Table 1.1 of the Preliminary works CoCP includes a detailed list of works and locations but does not include the Coalhouse Point mitigation work. Contrary to the mistaken assertion during ISH11, the works at Coalhouse Point would not in fact fall within the definition of preliminary works as detailed within the Preliminary Works Code of Construction Practice [\[REP6-043\]](#). Table 1.1 of the Preliminary works CoCP includes a detailed list of works and locations but does not include the Coalhouse Point mitigation work.
- B.3.3 Nevertheless, should for unforeseen circumstances the Main Works for the development be discontinued part way through construction, it is not possible to state at this stage to making any firm commitments about land that had been subject to development. That would be a matter for resolution by the Applicant and relevant authorities at the point at which any decision to discontinue was made, and would need to take account of the point in time at which that decision was made and the nature and state of completeness of any particular development that had taken place.
- B.3.4 What can be said is that should a decision be made by the Applicant to dispose of surplus land that it had already acquired, it is anticipated that the land would be subject to the so-called “Crichel Down Rules”, which are set out in *Guidance on Compulsory Purchase Process and The Crichel Down Rules* (Department for Levelling Up, Housing and Communities, 2019). These state that former

owners will, as a general rule, be given a first opportunity to repurchase the land previously in their ownership, provided that its character has not “*materially changed*” since acquisition (paragraph 10).

B.4 Hearing Action Point 12: Coalhouse Fort – Provision of wetland mitigation

- B.4.1 Hearing Action Point 12 requests: “*Provide an update as to whether the time window given in the REAC for the early provision of the wetland mitigation could/should be given greater prominence. Natural England, Thurrock Council and other IPs, may respond at D9*”. The Applicant’s response is below.
- B.4.2 In response to this action, and following further discussion with Natural England, REAC commitment HR011 has been updated as follows (the updated text is in red) [**Document Reference 6.3 ES Appendix 2.2 (8)**]:
- B.4.3 HR011: ‘*Works to construct a water inlet with self-regulating valve or equivalent structure (Work No. 5X) (HR010) would be undertaken with the following constraints:*
- p. *All works requiring access to the inter-tidal zone would be completed to suit tidal cycle and at periods of low water.*
 - q. *All piling works would be completed during periods of low water to avoid transmission of underwater noise.*
 - r. *All piling works would utilise soft start piling and other best practice techniques, as per the JNCC 2010 guidance (Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise), to help avoid noise and vibration impacts.*
 - s. *Excavated arisings would be retained within the coffer dam or stored on a support barge.*
 - t. *Construction of the water inlet and associated works to excavate scrapes and ditches will be undertaken between 1st April and 30th August where reasonably practicable. Where these works are taken outside of these months they shall be undertaken within a localised area over the shortest reasonably practicable time period.’*

B.5 Hearing Action Point 13: Coalhouse Point – Potential land contamination following any future flood event

- B.5.1 Hearing Action Point 13 requests: “*Provide further written comments on flood risk and possible associated contamination on the proposed wetland mitigation land and adjacent third-party land particularly following a flood event or similar.*

Mr Holland (on behalf of the Mott family) may wish to respond at D9". The Applicant's response is below.

- B.5.2 In terms of risks to third-party land, the conclusions of the Coalhouse Point Flood Risk Assessment [[REP6-102](#)] demonstrate that the proposed wetland works will not result in a change to the flood risk profile to adjacent land holdings and receptors.
- B.5.3 The East Tilbury landfill is the main source of potential contamination in this locality and is located to the west of the proposed wetland mitigation area adjacent to Coalhouse Fort, outside of the Project Order Limits. It was constructed as a land raise, sitting directly above the Alluvium. The land raise sits approximately 10m to 11m above ordnance datum (AOD) above the surrounding land. The land raise was restored with the importation of approximately 1m of soil cover above the raise. Dual drainage ditches were constructed around the perimeter of the waste to prevent leachate arising from the landfill spreading into the immediate surroundings. The internal ditch was sealed on the base and outside to prevent leachate entering the 'clean' outer ditch.
- B.5.4 A plausible receptor to potential contamination is the proposed wetland mitigation area adjacent to Coalhouse Fort. This is a change in receptor from the current use of the land as arable farmland, to a mosaic of coastal grazing marsh, shallow scrapes and high tide roost features.
- B.5.5 In the event of tidal flooding (due to either a breach or overtopping of the low-lying River Thames tidal flood defence), flood water could accumulate in the proposed mitigation area and potentially enter the outer and inner ditches surrounding East Tilbury landfill.
- B.5.6 There is therefore the existing potential for contaminants to be mobilised locally by flood water that may have been impacted by landfill leachate, which may be present in the drainage ditches. Such events would be sporadic and infrequent in nature and will not be made worse by the Project proposals. Whilst mobilisation may occur, any mobilised contamination would be subject to dilution and dispersal by the large volume of flood water. The potential for impact on the proposed wetland mitigation area from mobilised contamination, should this occur, is considered to be low and unlikely to have any detrimental effect to the habitat and its function.

Annex C Post-hearing submission on Agenda Item 5 Mitigation Proposals

C.1 Introduction

C.1.1 This section provides the post-hearing submissions for Agenda Item 5 Mitigation Proposals, from ISH11 on 22 November 2023 for the Project.

C.2 Hearing Action Point 16: Nitrogen deposition compensation – spatial relationship between impact and compensation

C.2.1 Hearing Action Point 16 requests: “*Submit details (including diagrammatical representations) indicating where nitrogen deposition compensation for each of the 4 clusters are proposed to be provided in comparison the relevant geographical locations of the impact that is sought to be mitigated*”. The Applicant’s response is below.

C.2.2 A map of the relationship between affected habitat, separated into four cluster areas, and proposed compensation areas is provided in Plate C.1 below. The plate shows the extent of the designated habitats across the route and highlights those areas which are adversely affected by increased nitrogen deposition either significantly or not significantly. As described by the Applicant in ISH11, and detailed within the Project Air Quality Action Plan [[APP-350](#)], the approach to providing compensation is based on the following two parallel principles:

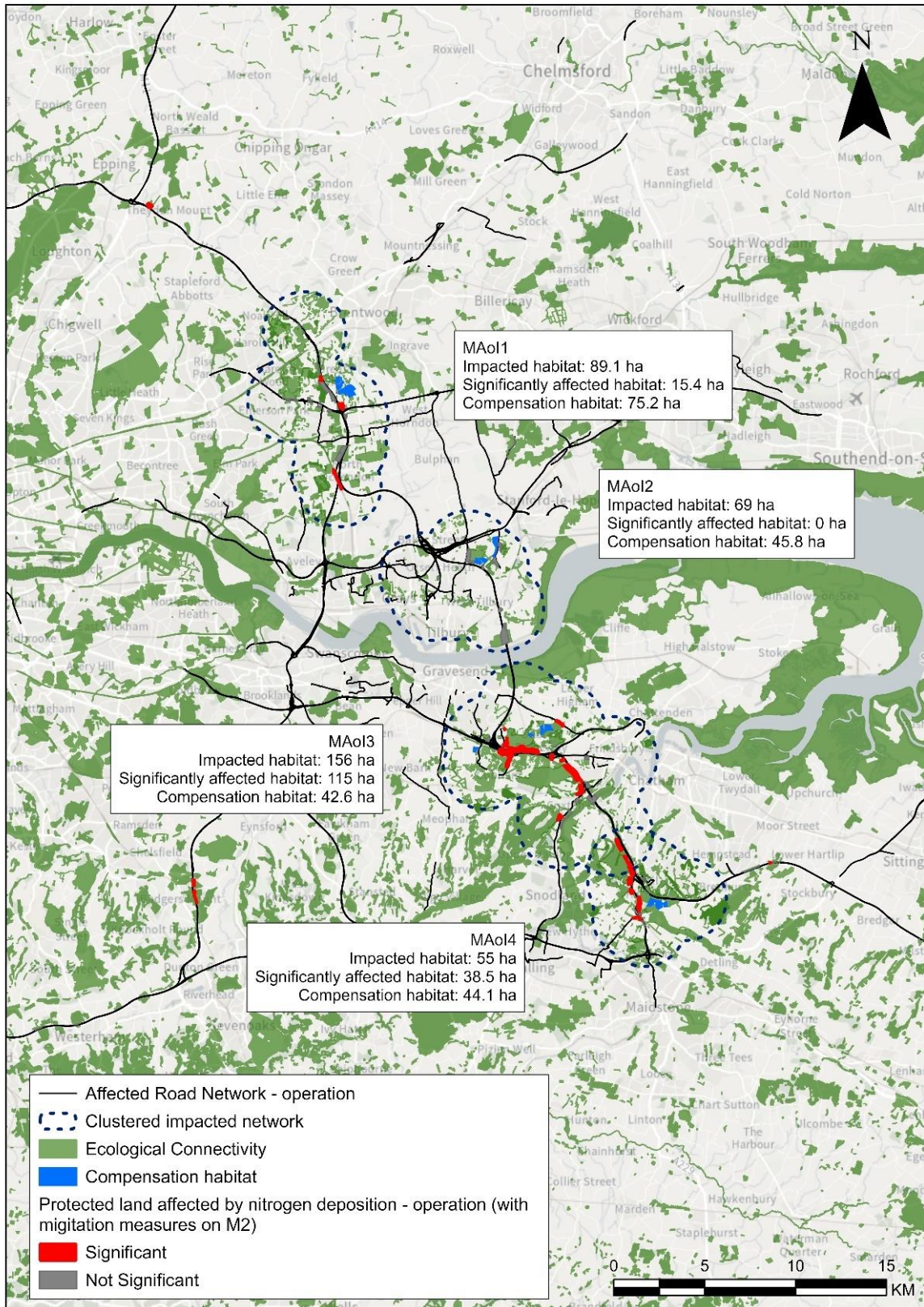
- u. Creating new wildlife-rich habitats, predominantly woodland and grassland, to provide an area comparable to that of the significantly adversely affected designated sites.
- v. Positioning these new habitats to link into and connect existing, retained high quality habitats, strengthening and building resilience in the network of habitats within which the designated sites sit at a landscape scale.

C.2.3 Plate C.1 reports the areas of habitats affected and the areas proposed for compensation within the clustered areas. Habitat creation is divided roughly equally between the four clustered areas to achieve the principle of building resilience into the landscape-scale network of ecological habitats that support the affected designated sites. As reported in the Project Air Quality Action Plan, there is no hierarchy in assessing the location of compensation provision with respect to proximity to affected sites. The key principle is developing a resilient and coherent ecological network across the Project and beyond into the wider

landscape, and this is why habitat creation is proposed equally across the clustered areas and north and south of the River Thames.

- C.2.4 The Applicant acknowledges that the northern-most cluster (MAoI1) provides approximately 30ha more compensation habitat than the three other clusters. As Plate C.1 illustrates, the areas offering ecological connectivity are more densely situated south of the River Thames than they are to the north. To build resilience into the ecological network north of the Thames therefore requires larger areas of habitat creation to develop links into that network. At MAoI1, the Applicant has used land within its ownership to develop links to woodland north and south of the proposed habitat creation area. This demanded more habitat to be created to span the distance between the two existing woodland blocks.
- C.2.5 This overarching approach to strengthening habitat connectivity to build coherent ecological networks is secured within the Design Principles document [\[REP7-140\]](#) at Clause PLA.05:
- C.2.6 *'Design proposals shall prioritise improving connectivity between existing habitats wherever reasonably practicable, as defined within the Environmental Masterplan (Application Document 6.2, Figure 2.4). Fragmentation of habitats shall be reduced as far as reasonably practicable by avoiding unnecessary barriers to movement and, where necessary, including design features which allow safe passage of animals, and colonisation by plants to enhance biodiversity.'*

Plate C.1 Relationship between the affected designated sites, ecological connectivity and the compensation areas



C.3 Hearing Action Point 18: RIES and nitrogen deposition matters

- C.3.1 Hearing Action Point 18 requests: “*To the extent that any of the matters raised in actions 14 to 17 bear on Habitats Regulations Assessment and positions summarised in the RIES, please respond to the RIES identifying the relevant actions and extracting relevant parts of your actions response*”. The Applicant’s response is below.
- C.3.2 There is no bearing on the Habitats Regulations Assessment from Actions 14 to 17, as the issues within the Report on the Implications for European Sites (RIES) relate to effects on European sites that do not require compensation.

Annex D Post-hearing submission on Agenda Item 6 Potentially Contaminated Land

D.1 Introduction

D.1.1 This section provides the post-hearing submissions for Agenda Item 6 Potentially Contaminated Land, from ISH11 on 22 November 2023 for the Project.

D.2 Hearing Action Point 19: Southern Valley Golf Course

D.2.1 Hearing Action Point 19 requests: “Clarify position of potential contamination on the proposed open space replacement land at Southern Valley Golf Course which would be provided to Gravesham Borough Council. In particular would the controls in the dDCO and related Control Documents ensure that the further contaminated land investigation and remediation (if required) also be carried out on this land as well as the parts of the golf course which would form part of the operational development itself”. The Applicant’s response is below.

D.2.2 The Applicant refers the Examining Authority to its response to ISH12 Hearing Action Point 2: Southern Valley Golf Course – replacement recreation land and potential land contamination [**Document Reference 9.188**].

References

No references on this page.

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.
Highways England		Former name of National Highways.
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 Planning Policy Framework	NPPF	A framework published in March 2012 by the UK's Department of Communities and Local Government, consolidating previously issued documents called Planning Policy Statements (PPS) and Planning Practice Guidance Notes (PPG) for use in England. The NPPF was updated in February 2019 and again in July 2021 by the Ministry of Housing, Communities and Local Government.
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.

Term	Abbreviation	Explanation
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.
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.

Appendix A Differences between West Kent Downs (sub area Cobham) and West Kent Downs (sub area Shorne) Local Landscape Character Area assessments (2020 vs 2022)

Table A.1 Reasons for change between landscape impact assessments from 2020 and 2022

Local Landscape Character Area (LLCA)	Change in significance since 2020	Reasons for change between visual impact assessments from 2020 and 2022				
		Sensitivity levels	Project changes since 2020	General review since 2020 – magnitude of effect	Magnitude of effect levels	2022 Conclusion on change in significance of effect (considered using the significance matrix in Table 3.8.1 of Design Manual for Roads and Bridges LA 104 Environmental Assessment and Monitoring (LA 104) ¹)
West Kent Downs (sub area Cobham) LLCA	<p>Construction Large adverse (2020) to moderate adverse (2022)</p> <p>Opening year winter Large adverse (2020) to slight adverse (2022)</p> <p>Design year summer Moderate adverse (2020)</p>	<p>Very high sensitivity (2020) to high sensitivity (2022) Reasoning provided in Responses to the Examining Authority's ExQ2 Appendix H – 12 Physical</p>	<p>Changes to proposed utilities diversions, resulting in a reduction in the worst-case assumptions on extent of vegetation removal required to facilitate the Project. Widening of Thong Lane green bridge</p>	<p>Construction The review for the 2022 Landscape and Visual Impact Assessment (LVIA) concluded that the Project would result in a slight change to the existing landscape character of the West Kent Downs (sub area Cobham) LLCA, due to the very limited direct</p>	<p>Construction Moderate (2020) to minor (2022) Opening year winter Moderate (2020) to negligible (2022)</p>	<p>Construction The significance matrix allows a choice of two significance categories when high sensitivity is combined with a minor magnitude of effect (the 2022 sensitivity and magnitude of effect assessments). The significance of effect has been assessed as moderate rather than slight due to the indirect effects associated with vegetation removal, and the resulting increased perception</p>

¹ Highways England (2020). Design Manual for Roads and Bridges LA 104 Environmental Assessment and Monitoring

Local Landscape Character Area (LLCA)	Change in significance since 2020	Reasons for change between visual impact assessments from 2020 and 2022				
		Sensitivity levels	Project changes since 2020	General review since 2020 – magnitude of effect	Magnitude of effect levels	2022 Conclusion on change in significance of effect (considered using the significance matrix in Table 3.8.1 of Design Manual for Roads and Bridges LA 104 Environmental Assessment and Monitoring (LA 104) ¹)
	to slight adverse (2022)	Effects of Development & Operation, question ExQ2_Q12.2.1 [REP6-115] .	south from approximately 30m to 40m overall width.	effects on landscape elements and the fact that indirect effects from removal of existing woodland and construction activity in the adjoining West Kent Downs (sub area Shorne) LLCA would only be perceived along the northern margin of the LLCA. This would be due to existing woodland curtailing the perception of change from further south within the LLCA.	Design year summer Minor (2020) to negligible (2022)	of construction activity and the A2 corridor. Opening year winter and design year summer The significance matrix only allows a choice of one significance category when high sensitivity is combined with a negligible magnitude of effect (the 2022 sensitivity and magnitude of effect assessments). Reduced significance level during construction but effects still considered to be significant. Effects no longer considered to be significant during the opening year or design year.

Local Landscape Character Area (LLCA)	Change in significance since 2020	Reasons for change between visual impact assessments from 2020 and 2022				
		Sensitivity levels	Project changes since 2020	General review since 2020 – magnitude of effect	Magnitude of effect levels	2022 Conclusion on change in significance of effect (considered using the significance matrix in Table 3.8.1 of Design Manual for Roads and Bridges LA 104 Environmental Assessment and Monitoring (LA 104) ¹)
				<p><u>Opening year winter and design year summer</u></p> <p>The review for the 2022 Landscape and Visual Impact Assessment (LVIA) concluded that the Project would result in a very minor loss of existing landscape elements and very minor change to the existing landscape character.</p>		
West Kent Downs (sub area Shorne) LLCA	<p>Construction No change from 2020</p> <p>Opening year winter No change from 2020</p>	No change from 2020 (very high sensitivity)	Changes to proposed utilities diversions, resulting in a reduction in the worst-case assumptions on extent of	<p>Construction No change from 2020</p> <p>Opening year winter No change from 2020</p>	<p>Construction No change from 2020</p> <p>Opening year winter No change from 2020</p>	<p>Construction No change from 2020</p> <p>Opening year winter No change from 2020</p> <p>Design year summer The significance matrix allows a choice of two significance</p>

Local Landscape Character Area (LLCA)	Change in significance since 2020	Reasons for change between visual impact assessments from 2020 and 2022				
		Sensitivity levels	Project changes since 2020	General review since 2020 – magnitude of effect	Magnitude of effect levels	2022 Conclusion on change in significance of effect (considered using the significance matrix in Table 3.8.1 of Design Manual for Roads and Bridges LA 104 Environmental Assessment and Monitoring (LA 104) ¹)
	<p>Design year summer Large adverse (2020) to moderate adverse (2022)</p>		<p>vegetation removal required to facilitate the Project. Widening of Thong Lane green bridge south from approximately 30m to 40m overall width.</p>	<p>Design year summer The review for the 2022 LVIA concluded that by the design year, the Project would result in a slight change to the existing landscape character of the West Kent Downs (sub area Shorne) LLCA. This was because proposed mitigation planting was considered to reduce effects from those assessed at opening year (winter), as it would help to restore some vegetation cover along the A2 corridor, with proposed planting</p>	<p>Design year summer Moderate (2020) to minor (2022)</p>	<p>categories when very high sensitivity is combined with a minor magnitude of effect (the 2022 sensitivity and magnitude of effect assessments). The significance of effect has been assessed as moderate rather than large due to the retention of the existing wooded character beyond the modified A2, with the effects of the Project therefore contained by surrounding woodland. No change to significant effects reported in either 2020 or 2022.</p>

Local Landscape Character Area (LLCA)	Change in significance since 2020	Reasons for change between visual impact assessments from 2020 and 2022				
		Sensitivity levels	Project changes since 2020	General review since 2020 – magnitude of effect	Magnitude of effect levels	2022 Conclusion on change in significance of effect (considered using the significance matrix in Table 3.8.1 of Design Manual for Roads and Bridges LA 104 Environmental Assessment and Monitoring (LA 104) ¹)
				on the Brewers Road green bridge and Thong Lane green bridge south helping to reduce perceived landscape severance.		

Appendix B Updated landscape impact assessment tables for the West Kent Downs (sub area Cobham and sub area Shorne) LLCA based on the published landscape character area boundary from the Kent Downs AONB Landscape Character Assessment Update 2020

Note: The following tables follow the format in ES Appendix 7.9: Schedule of Landscape Effects [[APP-384](#)] with corresponding table numbers, and set out the assessment if the published LLCA boundary was used.

Table 1.3 LLCAs susceptibility to specific change

Landscape receptor	Degree of susceptibility to specific change	Commentary
Kent Downs AONB		
West Kent Downs (sub area Cobham)	High (Medium in ES Appendix 7.9)	<p>This LLCA lies within a nationally valued, accessible landscape designated as an AONB and contains nationally important biodiversity designations and heritage assets, as well as having an area of recreational value at Ashenbank Wood.</p> <p>The receptor has limited capacity to accommodate the Project, which would require loss of prominent and mature woodland, a key characteristic of the landscape and one of the special components, characteristics and qualities of the AONB.</p>
West Kent Downs (sub area Shorne)	High (Also High in ES Appendix 7.9)	<p>This LLCA lies within a nationally valued, accessible landscape designated as an AONB and contains nationally important biodiversity designations. The local character area of Shorne has been severed from the more extensive AONB landscape to the south by the A2 road corridor. It is bounded to the north by the open farmland of the Hoo Peninsula. There are areas of designated ancient woodland, a SSSI and several veteran trees.</p> <p>The receptor has limited capacity to accommodate the Project, which would require loss of prominent and mature woodland, a key characteristic of the landscape and one of the special components, characteristics and qualities of the AONB.</p>

Landscape receptor	Degree of susceptibility to specific change	Commentary
West Kent Downs Landscape Character Area (LCA) 1A (Overview comprising sub areas of Shorne and Cobham)	High (Also High in ES Appendix 7.9)	This is a nationally designated landscape, containing nationally important biodiversity designations and large areas of woodland, including ancient woodland. The existing A2 and HS1 corridors cross the LCA, although existing woodland reduces the influence of these infrastructure features in the wider LCA. The receptor has limited capacity to accommodate the Project, which would require large-scale loss of prominent and mature woodland, a key characteristic of the landscape and one of the special components, characteristics and qualities of the AONB.

Table 2.3 Schedule of landscape effects on LLCAs during construction

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
Kent Downs AONB				
West Kent Downs (sub area Cobham) Key characteristics of relevance to study area (based on Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023):	Very high (High in ES Appendix 7.9)	Moderate adverse (Minor in ES Appendix 7.9)	Large adverse effect (Moderate in ES Appendix 7.9)	Project construction activity would occur over a medium-term period. Main Project (highway and associated infrastructure, earthworks, construction compounds and walkers, cyclists, and horse riders (WCHs)) – nature of effects Proposed construction activity would be focused on the A2 westbound widening work, which would generally occur within the same footprint of the existing A2, although extending to the south of the existing footprint in some areas to accommodate additional carriageways. The widening would require a number of retaining structures to account for level changes.

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
<ul style="list-style-type: none"> • Extensive woodland blocks, some providing a backdrop to the wider landscape, with several designated features, including ancient woodland at Ashenbank Wood and some veteran trees. • Woodland, parkland, a golf course and wood pasture within Cobham Hall Grade II* Registered Park and Garden. • The gently undulating landform, combined with hedgerow trees and woodland, provides containment. • Northern boundary influenced by HS1 and A2 corridors, with the perception of night-time lighting and reduced levels of tranquillity. 				<p>Proposed construction activity would also include the construction of the proposed WCH route to the south of HS1, replacement of street lighting (new LED (light-emitting diode) luminaires on columns at a reduced height to the existing columns) and existing gantries and installation of new road signage, as well as demolition of the existing Thong Lane and Brewers Road overbridges and construction of a new Brewers Road green bridge with temporary craneage.</p> <p>Construction activities would be limited to the northern periphery of this LLCA and would result in the following direct effects:</p> <ul style="list-style-type: none"> • Loss of woodland in the southern part of the A2 central reservation would result in increased perception of the modified A2 eastbound carriageway, with increased prominence of highway infrastructure. • Loss of woodland between the A2 westbound carriageway and HS1, including within part of the northern margin of Cobham Hall Grade II* Registered Park and Garden that lies between the A2 and HS1 and remnant woodland within the Shorne and Ashenbank Woods SSSI between the A2 and HS1. • Loss of a small number of trees along Brewers Road and to the south-east of Brewers Road overbridge. • Noticeable loss of the existing false cutting between the A2 and HS1, near Brewers Road overbridge. • Noticeable construction activity along the A2 westbound carriageway associated with the dismantling of existing highway infrastructure, installation of new gantries, road signs and lighting, and construction of retaining walls and carriageways along the A2.

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
				<ul style="list-style-type: none"> • A further reduction in the level of tranquillity experienced along the A2 corridor, due to construction activity and associated additional noise sources, including along the periphery of Cobham Hall Grade II* Registered Park and Garden and Rochester and Cobham Park Golf Club, close to the A2. • Limited perceived change in the night-time environment as a result of construction activity and related light sources evident along the widened A2 corridor, experienced in the context of existing street lighting along the A2. <p>Some indirect effects on this LLCA would also result from construction activity in the adjoining West Kent Downs (sub area Shorne) and nearby Higham Arable Farmland (sub area Thong) LLCAs as follows:</p> <ul style="list-style-type: none"> • The perception of reduced tree cover to the north would result from the removal of the northern part of the woodland belt in the A2 central reservation, which currently reduces the apparent scale and width of the existing road corridor. • The perception of reduced tree cover to the north due to the removal of the existing woodland along the southern edge of Shorne Woods Country Park, which currently contributes to the wooded character along the existing road corridor. • The perception of large-scale construction activity to the north for the A2 widening along the eastbound carriageway and north-west for the M2/A2/A122 Lower Thames Crossing junction and Thong Lane green bridge south. <p>Most of the key characteristics of the landscape would be unaffected. Removal of woodland along the A2 corridor would adversely affect the wooded character of the LLCA, as well as reducing integration of the A2 corridor. In addition, a small group</p>

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
				<p>of trees along the northern edge of Cobham Hall Grade II* Registered Park and Garden would be removed and there would be some indirect effects associated with woodland removal for the A2 eastbound widening works in the adjoining West Kent Downs (sub area Shorne) LLCA that forms part of the wooded backdrop to the northern margin of the West Kent Downs (sub area Cobham) LLCA between HS1 and the A2 corridor.</p> <p>Overall, the Project would result in partial loss of distinctive landscape elements due to loss of woodland, and noticeable change to existing landscape character due to widening of the existing westbound A2 on the northern edge of the LLCA. However, the perception of change would be principally limited to the A2 road corridor and immediately adjoining area and perceived in the context of the existing heavily trafficked A2 corridor.</p> <p>Project utility works – nature of effects</p> <p>Utility works in the West Kent Downs (sub area Cobham) would include:</p> <ul style="list-style-type: none"> • Installation of a multi-utility corridor in one lane of Halfpence Lane. • Installation of multi-utility corridors along the south of the A2 and along Brewers Road. <p>The following direct effect would result from utility works, in addition to the related construction activity:</p> <ul style="list-style-type: none"> • The loss of woodland between the A2 and HS1 corridors. • The loss of a small number of trees adjoining Halfpence Lane roundabout. <p>Some indirect effects on this LLCA would also result from utility works in the adjoining West Kent Downs (sub area Shorne) and</p>

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
				<p>nearby Higham Arable Farmland (sub area Thong) LLCAs as follows:</p> <ul style="list-style-type: none"> • The perception of construction activity associated with the installation of utilities along the north of the A2 corridor. • The perception of reduced vegetation cover along the southern edge of Shorne Woods Country Park. • The perception of reduced woodland and utility works between HS1 and the A2 westbound carriageway south of the new Thong Lane green bridge south and the M2/A2/A122 Lower Thames Crossing junction. <p>Most of this LLCA would be unaffected by utility works, however, removal of woodland between the A2 and HS1 corridors would adversely affect the wooded character of the LLCA locally, as well as reducing integration of the A2 corridor.</p> <p>Overall, the utility works would result in the partial loss of landscape elements and noticeable damage to existing landscape character within the West Kent Downs (sub area Cobham) LLCA.</p> <p>Justification for significance level where two significance categories are given in LA 104</p> <p>The significance of effect has been assessed as large rather than very large due to construction works being perceived in the context of the existing A2 and HS1 corridors.</p>
<p>West Kent Downs (sub area Shorne)</p> <p>Key characteristics of relevance to study area (based on Kent Downs</p>	<p>Very high (Very high in ES Appendix 7.9)</p>	<p>Moderate adverse (Major in ES</p>	<p>Large adverse effect (Very large in ES Appendix 7.9)</p>	<p>Project construction activity would occur over a medium-term period.</p> <p>Main Project (highway and associated infrastructure, earthworks, construction compounds and WCHs) – nature of effects</p>

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
<p>AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023):</p> <ul style="list-style-type: none"> • Extensive areas of woodland, with several designated features, including ancient woodland at Shorne Woods Country Park and veteran trees. • The densely wooded nature creates a strong sense of enclosure. • Steeply undulating, ridge landform that provides an attractive backdrop to views from surrounding LLCAs. • Prominent transportation infrastructure along the A2 corridor, with the perception of night-time lighting and reduced levels of tranquillity. • Mature tree belts along the A2 corridor. 		Appendix 7.9)		<p>Proposed construction activity would be focused on the A2 eastbound widening work, which would occur within the same footprint of the existing A2, and slightly to the north of the existing footprint in some areas to accommodate additional carriageways. The widening would require a number of retaining structures to account for level changes along the widened corridor.</p> <p>Other works would include replacement of street lighting (new LED luminaires on columns at a reduced height to the existing columns), dismantling of existing gantries and installation of new gantries and road signage. There would also be the demolition of the existing Thong Lane and Brewers Road overbridges, construction of the replacement Brewers Road green bridge with temporary crange and construction of an attenuation basin to the east of Park Pale.</p> <p>Activities would be limited to the southern periphery of this LLCA and would result in the following direct effects:</p> <ul style="list-style-type: none"> • Loss of woodland in the northern part of the A2 central reservation would result in increased perception of the modified A2 westbound carriageway, with increased prominence of highway infrastructure. • Loss of a small area of trees to facilitate construction of Brewers Road green bridge. • Loss of woodland on the southern edge of Shorne Woods Country Park, including some ancient woodland, adjoining the northern edge of the A2 eastbound carriageway. Some tree loss along Brewers Road would affect the characteristic enclosure along this rural lane as it approaches the Project/A2 corridor.

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
				<ul style="list-style-type: none"> • Partial loss of woodland east of Park Pale as a result of new earthworks. • Noticeable change to the existing false cutting east of Park Pale. • Noticeable construction activity along the A2 eastbound carriageway associated with the dismantling of existing highway infrastructure, installation of new gantries, road signs and lighting, and construction of retaining walls and carriageways along the A2 and a new large-scale attenuation basin east of Park Pale. • A further reduction in the level of tranquillity experienced along the A2 corridor, due to construction activity and associated additional noise sources, although this would be most apparent close to the A2 where the existing road corridor is audible. • Limited perceived change in the night-time environment as a result of construction activity and related light sources evident along the widened A2 corridor, experienced in the context of existing street lighting along the A2. <p>Some indirect effects on this LLCA would also result from construction activity in the adjoining West Kent Downs (sub area Cobham) and Higham Arable Farmland (sub area Thong) LLCAs as follows:</p> <ul style="list-style-type: none"> • The perception of reduced tree cover to the south would result from the removal of the southern part of the woodland belt in the A2 central reservation, which currently reduces the apparent scale and width of the existing road corridor. • The perception of reduced tree cover to the south due to the removal of existing woodland between the A2 and HS1

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
				<p>corridors, which currently contributes to the landscape buffer along the existing road corridor.</p> <ul style="list-style-type: none"> • The perception of large-scale construction activity to the south for the A2 widening along the westbound carriageway. • The perception of large-scale construction activity to the west for the M2/A2/A122 Lower Thames Crossing junction, due to removal of existing woodland at Gravelhill Wood and the new Thong Lane green bridge south, as well as within the A2 compound. • The perception of reduced tree cover to the west due to the removal of existing woodland at Gravelhill Wood, which currently provides enclosure on the south-western edge of the LLCA. <p>Most of the key characteristics of the landscape would be unaffected. Removal of woodland along the A2 corridor for the widening works, including some ancient woodland on the edge of Shorne Woods Country Park, would adversely affect the wooded character of the LLCA, as well as reducing integration of the A2 corridor.</p> <p>Overall, the Project would result in partial loss of distinctive landscape elements due to loss of woodland, and noticeable change to existing landscape character due to widening of the existing eastbound A2 on the southern edge of the LLCA. However, the perception of change would be principally limited to the A2 road corridor and immediately adjoining area and perceived in the context of the existing heavily trafficked A2 route corridor.</p> <p>Project utility works – nature of effects</p>

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
				<p>Utility works in the West Kent Downs (sub area Shorne) LLCA would include:</p> <ul style="list-style-type: none"> • Installation of a large-bore medium-pressure gas pipeline diversion, from the Inn on the Lake to Park Pale, following a line parallel to and north of the A2 eastbound local distributor road • Installation of multi-utility corridors along the north of the A2 • Installation and operation of Park Pale Utility Hub <p>The following direct effect would result from utility works, in addition to the related construction activity:</p> <ul style="list-style-type: none"> • The loss of woodland, including the central reservation tree belt, some ancient woodland along the southern edge of the Shorne Woods Country Park and woodland adjoining Park Pale <p>The following indirect effects on this LLCA would result from utility works in the adjoining West Kent Downs (sub area Cobham) and Higham Arable Farmland (sub area Thong) LLCAs:</p> <ul style="list-style-type: none"> • The perception of utility works between the A2 and HS1 corridors. • The perception of utility works west of Thong Lane. • The perception of reduced vegetation cover as a result of woodland removal at Gravelhill Wood. • The perception of reduced vegetation cover due to woodland removal south of the A2 corridor. <p>Most of this LLCA would be unaffected by utility works, however, removal of woodland along the A2, including some ancient woodland within Shorne Woods Country Park, would adversely</p>

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
				<p>affect the wooded character of the LLCA locally, as well as reducing integration of the A2 corridor.</p> <p>Overall, the utility works would result in the partial loss of landscape elements and noticeable damage to existing landscape character within the West Kent Downs (sub area Shorne) LLCA.</p> <p><u>Justification for significance level where two significance categories are given in LA 104</u></p> <p>The significance of effect has been assessed as large rather than very large due to construction works being perceived in the context of the existing A2 corridor.</p>
<p>West Kent Downs LCA 1A (which includes the LLCA sub areas of Shorne and Cobham)</p> <p>Relevant special components, characteristics and qualities from the Kent Downs AONB Management Plan 2021–2026 (Kent Downs AONB Unit, 2021):</p> <ul style="list-style-type: none"> • Dramatic landform and views • Farmed landscape • Woodland and trees (including ancient woodland and veteran trees) and hedgerows 	<p>Very high (Very high in ES Appendix 7.9)</p>	<p>Moderate adverse (Moderate in ES Appendix 7.9)</p>	<p>Large adverse effect (Large in ES Appendix 7.9)</p>	<p>The principal construction activities within the West Kent Downs LCA 1A would be as described above for the West Kent Downs (sub area Cobham) LLCA and West Kent Downs (sub area Shorne) LLCA.</p> <p>Within these LLCAs, change to existing landscape character resulting from main Project construction and utility works would be noticeable.</p> <p>No other changes are required to the text within this commentary when the published LLCA boundary between the West Kent Downs (sub area Cobham) and West Kent Downs (sub area Shorne) LLCAs from the Kent Downs AONB Landscape Character Assessment Update 2020 is used.</p>

Landscape receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect	Significance of effect	Commentary
<ul style="list-style-type: none"> Tranquillity and remoteness (including dark night skies, space, beauty and peace) 				

Table 3.3 Schedule of landscape effects on LLCAs during operation

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
Kent Downs AONB							
<p>West Kent Downs (sub area Cobham)</p> <p>Key characteristics of relevance to study area (based on Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023):</p> <ul style="list-style-type: none"> • Extensive woodland blocks, some providing a backdrop to the wider landscape, with several designated features, including ancient woodland at Ashenbank 	<p>Very high (High in ES Appendix 7.9)</p>	<p>Moderate adverse (Negligible in ES Appendix 7.9)</p>	<p>Minor adverse (Negligible in ES Appendix 7.9)</p>	<p>Large adverse effect (Slight in ES Appendix 7.9)</p>	<p>Moderate adverse effect (Slight in ES Appendix 7.9)</p>	<p>The West Kent Downs (sub area Cobham) LLCA would encompass the A2 westbound widening, east of Thong Lane. Noticeable alterations to the physical fabric of this LLCA and perceived changes in character would be limited to the northern margin of this LLCA. Here, the modified A2 corridor would comprise up to 8 lanes of traffic (typically 6 with the A2 westbound carriageway and new local distributor road). The widened road corridor would be at a similar elevation to existing, except where the widening works extend beyond the existing A2 footprint, resulting in a requirement for new earthworks and retaining structures. Typically, the modified corridor would not be visible from the wider LLCA. A key consideration for proposed mitigation has been to avoid loss of woodland where practicable, the provision of planting to compensate for loss of vegetation, and two new green bridges (one partly within and one just</p>	<p>Highway Sections 1 and 2</p>

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
<p>Wood and some veteran trees.</p> <ul style="list-style-type: none"> Woodland, parkland, a golf course and wood pasture within Cobham Hall Grade II* Registered Park and Garden. The gently undulating landform, combined with hedgerow trees and woodland, provides containment. Northern boundary influenced by HS1 and A2 corridors, with the perception of night-time lighting and reduced levels of tranquillity. 						<p>outside of the LLCA) to reduce the perception of severance resulting from the widened A2 corridor. Scattered tree planting has also been proposed to reinstate trees removed during construction near Cobham Hall Registered Park and Garden, reflecting the parkland character of this part of the LLCA.</p> <p>Opening year (winter)</p> <p>The Project would result in the following main direct effects in the opening year:</p> <ul style="list-style-type: none"> The continued absence of vegetation removed during construction, as outlined in Table 2.3, resulting in a perceived increase in the prominence and scale of the A2 corridor on the northern margin of the LLCA. A perception of greater landscape severance between the north and south of the modified A2. Increased perception of highway infrastructure due to new gantries, signage, retaining structures and replacement lighting columns, in conjunction with vegetation removal. 	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<ul style="list-style-type: none"> Figure 12.7: Opening Year Noise Change Contour (DSOY minus DMOY) (Application Document 6.2) indicates isolated pockets of major to minor adverse change (increase) in noise close to the south of the A2 corridor, with the greatest adverse change near the realigned Thong Lane. There would be a minor beneficial change (reduction) in noise along the rest of the northern edge of the LLCA and along Halfpence Lane, with localised areas of moderate beneficial change (reduction) to the south-east of Brewers Road green bridge and north-east of Jeskyns Community Woodland. Figure 12.7 also indicates a minor adverse change (increase) in noise at the south-eastern tip of the LLCA in proximity to the A228 corridor. Overall, despite some reductions in noise levels, there would be a further reduction to existing tranquillity due to the increased prominence of the modified A2 corridor, associated vehicle traffic and highway infrastructure, along the northern 	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>edge of the LLCA, where tranquillity is already adversely affected by transport infrastructure including HS1. Effects on existing tranquillity at the south-eastern tip of the LLCA would be limited by adjoining woodland.</p> <p>Some indirect effects on this LLCA would also result from:</p> <ul style="list-style-type: none"> • The continued absence of vegetation removed during construction within the adjoining West Kent Downs (sub area Shorne) LLCA, as outlined in Table 2.3, resulting in an increased perception of a widened A2 corridor and highway infrastructure. • The perception of the Brewers Road green bridge (partly within the West Kent Downs (sub area Shorne) LLCA) and Thong Lane green bridge south within Higham Arable Farmland (sub area Thong) LLCA. • Limited perception of the large-scale M2/A2/A122 Lower Thames Crossing junction in the Higham Arable Farmland (sub area Thong) LLCA. 	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>Night-time environment</p> <p>There would be a perceived change in the night-time environment within the LLCA due to the change in street lighting (LED luminaires). Installed on lower columns, emitting reduced light spill and skyglow compared with the existing luminaires, the prominence of new lighting would be limited and perceived in the context of existing lighting. However, due to the widened corridor, the extent of lighting would be increased, with additional lanes of traffic and vehicle lights evident. Additional light sources would also be present along the reconfigured Thong Lane to the south of the A2 at the Thong Lane green bridge south in the Higham Arable Farmland (sub area Thong) LLCA. However, these light sources would be seen in the context of existing lighting along the A2.</p> <p>Summary: opening year (winter)</p> <p>Most of the key characteristics of the landscape would be unaffected. However, the continued absence of central reservation woodland and woodland along the south of the A2 corridor would adversely affect the</p>	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>wooded character of the LLCA locally, as well as reducing integration of the A2 corridor. In addition, there would be the continued absence of a small group of mature trees along the northern edge of Cobham Hall Grade II* Registered Park and Garden, which would alter the parkland character slightly. In addition, there would be some indirect effects associated with the continued absence of woodland in the adjoining West Kent Downs (sub area Shorne) LLCA, which would slightly alter the wooded backdrop to the West Kent Downs (sub area Cobham) LLCA.</p> <p>Overall, the Project would result in a noticeable loss of trees and woodland along the A2 corridor resulting in a noticeable change to the existing landscape character on the northern margin of the West Kent Downs (sub area Cobham) LLCA. However, south of the HS1 corridor, the woodland character of the landscape would be maintained, and the effects of the Project therefore contained.</p> <p><i>Justification for significance level where two significance categories are given in LA 104</i></p>	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>The significance of effect has been assessed as large rather than very large due to the localised nature of effects.</p> <p>Design year (summer)</p> <p>The establishment of new planting south of the A2 corridor would help to reinstate vegetation removed during construction and to some extent reinstate the existing landscape character. However, the permanent loss of trees and woodland, including within the former central reservation, would result in a continued perceived increase in the prominence and scale of the A2 corridor along the northern margin of the LLCA.</p> <p>Figure 12.8: Future Year Noise Change Contour (DSFY minus DMOY) (Application Document 6.2) indicates a localised area of moderate to minor adverse change (increase) in noise near the realigned Thong Lane. There would be no change/negligible change in noise within much of the rest of the LLCA, with localised areas of minor beneficial change (reduction) in noise to the south-east of Brewers Road green bridge and north-east of Jeskyns Community Woodland. Overall, despite some reductions in noise levels, there would</p>	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>continue to be a reduction to tranquillity due to the increased perception of moving traffic and highway infrastructure along the A2 corridor, although in an area where tranquillity is already adversely affected by transport infrastructure.</p> <p>Established planting on the Brewers Road green bridge, partly within the West Kent Downs (sub area Shorne) LLCA, and on the Thong Lane green bridge south within the adjacent Higham Arable Farmland (sub area Thong) LLCA, would aid the integration of these prominent features into the landscape and help reduce the perception of landscape severance between the north and south of the modified A2 corridor.</p> <p>Established mitigation planting on the large embankment north-east of the M2/A2/A122 Lower Thames Crossing junction in the adjoining Higham Arable Farmland (sub area Thong) LLCA would help to reduce the perception of earthworks, structures, vehicle movements and highway infrastructure to the north-west.</p>	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>Night-time environment</p> <p>Between the opening and design years, the establishment of planting along the southern edge of the modified A2 corridor would to some extent help reduce the effects of new lighting on the night-time environment.</p> <p>Summary: design year (summer)</p> <p>Established planting along the south of the A2 corridor would help to restore key characteristics altered during construction. However, less planting would be present, with the continued absence of woodland in the former central reservation, resulting in a permanent localised change in the wooded character of the LLCA and slight increased perception of highway infrastructure and vehicle movements.</p> <p>Established scattered trees along the northern edge of Cobham Hall Grade II* Registered Park and Garden and linear tree and shrub planting would help to restore parkland character in this part of the LLCA.</p> <p>By the design year, the Project would result in a slight change to the existing</p>	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>landscape character of the West Kent Downs (sub area Cobham) LLCA.</p> <p><i>Justification for significance level where two significance categories are given in LA 104</i></p> <p>The significance of effect has been assessed as moderate rather than large due to the retention of the existing wooded character beyond the modified A2, with the effects of the Project therefore contained by surrounding woodland.</p>	
<p>West Kent Downs (sub area Shorne)</p> <p>Key characteristics of relevance to study area (based on Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023):</p> <ul style="list-style-type: none"> • Extensive areas of woodland, with several 	<p>Very high (Very high in ES Appendix 7.9)</p>	<p>Moderate adverse (Moderate in ES Appendix 7.9)</p>	<p>Minor adverse (Minor in ES Appendix 7.9)</p>	<p>Large adverse effect (Large in ES Appendix 7.9)</p>	<p>Moderate adverse effect (Moderate in ES Appendix 7.9)</p>	<p>The West Kent Downs (sub area Shorne) LLCA would encompass the A2 eastbound widening, east of Thong Lane. Noticeable alterations to the physical fabric of this LLCA and perceived changes in character would be focused on the southern margin of this LLCA. Here, the modified A2 corridor would comprise up to 8 lanes of traffic (typically 6 with the A2 carriageways and new local distributor roads). The corridor would be at a similar elevation to existing, except where the widening works extend beyond the existing A2 footprint,</p>	<p>Highway Sections 1 and 2</p>

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
<p>designated features, including ancient woodland at Shorne Woods Country Park and veteran trees.</p> <ul style="list-style-type: none"> The densely wooded nature creates a strong sense of enclosure. Steeply undulating, ridge landform that provides an attractive backdrop to views from surrounding LLCAs. Prominent transportation infrastructure along the A2 corridor, with the perception of 						<p>resulting in a requirement for new earthworks and retaining structures. A key consideration for proposed mitigation has been to avoid loss of the most important existing woodland where practicable, together with the provision of new woodland to compensate for that lost and two new green bridges (one partly within and one just outside of the LLCA) to reduce the perception of severance resulting from the widened A2 corridor.</p> <p>Order Limits have also been included within this LLCA for ancient woodland compensation planting and for the creation of woodland and grassland habitat in a nitrogen deposition compensation site.</p> <p><u>Opening year (winter)</u></p> <p>The Project would result in the following main direct effects in the opening year:</p> <ul style="list-style-type: none"> Permanent conversion of pasture fields to woodland and grassland habitat within the nitrogen deposition compensation site and ancient woodland compensation areas. The continued absence of vegetation removed during construction, as 	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
night-time lighting and reduced levels of tranquillity. <ul style="list-style-type: none"> • Mature tree belts along the A2 corridor. 						outlined in Table 2.3, resulting in a perceived increase in the prominence and scale of the A2 corridor on the southern margin of the LLCA. <ul style="list-style-type: none"> • A perception of greater landscape severance between the north and south of the modified A2. • Increased perception of highway infrastructure due to new gantries, signage, retaining structures and replacement lighting columns, in conjunction with vegetation removal. • Figure 12.7 (Application Document 6.2) indicates a range of major to minor beneficial change (reduction) in noise along the northern edge of the A2 corridor, with the greatest beneficial change occurring to the north-east of Thong Lane near the Inn on the Lake Hotel and further east in a narrow band within approximately 50m of the north of the A2. There would also be no change/negligible change in noise along the western edge of the LLCA. Overall, despite some reductions in noise levels, there would be a further 	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>reduction to existing tranquillity along the southern edge of the LLCA due to the increased prominence of the modified A2 corridor and associated vehicle traffic. However, this would be experienced in the context of the existing A2 corridor, which already compromises tranquillity in this location.</p> <p>Some indirect effects on this LLCA would also result from:</p> <ul style="list-style-type: none"> • The continued absence of vegetation removed during construction within the adjoining West Kent Downs (sub area Cobham) LLCA, as outlined in Table 2.3, resulting in an increased perception of a broadened A2 corridor and highway infrastructure. • The continued absence of Gravelhill Wood in the adjoining Higham Arable Farmland (sub area Thong) LLCA, opening up localised outward views to the M2/A2/A122 Lower Thames Crossing junction to the west. • Due to woodland removal described above, the perception of earthworks, structures, vehicle movements and 	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>highway infrastructure at the M2/A2/A122 Lower Thames Crossing junction and the Thong Lane green bridge south in the adjoining Higham Arable Farmland (sub area Thong) LLCA. However, these effects would be limited to the western edge of the West Kent Downs (sub area Shorne) LLCA due to retained woodland within the wider LLCA.</p> <ul style="list-style-type: none"> The perception of the Brewers Road green bridge (partly within the West Kent Downs (sub area Cobham) LLCA)). <p>Night-time environment</p> <p>Overall, there would be a perceived change in the night-time environment within the LLCA due to the change in street lighting (LED luminaires). Installed on lower columns, emitting reduced light spill and skyglow compared with the existing luminaires, the prominence of new lighting would be limited and perceived in the context of existing lighting. However, due to the widened corridor, the extent of lighting would be increased, with additional lanes of traffic and vehicle lights evident. Additional</p>	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>light sources would also be present on the Thong Lane green bridge south in the Higham Arable Farmland (sub area Thong) LLCA, although perceived in the context of existing lighting.</p> <p>Summary: opening year (winter)</p> <p>Most of the key characteristics of the landscape would be unaffected. However, the continued absence of woodland within the central reservation and along the north of the A2 corridor would adversely affect the wooded character of the LLCA locally, as well as reducing integration of the A2 corridor. Overall, the Project would result in a noticeable loss of trees and woodland along the A2 corridor resulting in a noticeable change to the existing landscape character on the southern margin of the West Kent Downs (sub area Shorne) LLCA. However, beyond the modified A2 corridor and adjoining area, the woodland character of the landscape would be maintained, and the effects of the Project therefore contained.</p>	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p><i>Justification for significance level where two significance categories are given in LA 104</i></p> <p>The significance of effect has been assessed as large rather than very large due to the localised nature of effects.</p> <p>Design year (summer)</p> <p>The establishment of new planting along the north of the A2 corridor would help to reinstate vegetation removed during construction and to some extent reinstate the existing landscape character. However, the permanent loss of trees and woodland, including within the former central reservation, would result in a continued perceived increase in the prominence and scale of the A2 corridor along the southern margin of the LLCA.</p> <p>Figure 12.8 (Application Document 6.2) indicates a moderate to minor beneficial change (reduction) in noise to the north-east of Thong Lane near the Inn on the Lake Hotel and in isolated pockets further east along the A2 corridor, the majority of which would be within 50m of the north of the A2. There would be no change/negligible change in noise within</p>	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>much of the rest of the LLCA. Overall, despite some reductions in noise levels, there would continue to be a reduction to tranquillity due to the increased perception of moving traffic and highway infrastructure along the A2 corridor. However, this would be experienced in the context of the existing A2 corridor, which already compromises tranquillity in this location.</p> <p>Established planting on the Brewers Road green bridge, partly within the adjacent West Kent Downs (sub area Cobham) LLCA, and on the Thong Lane green bridge south within the adjacent Higham Arable Farmland (sub area Thong) LLCA, would aid the integration of these prominent features into the landscape and help reduce the perception of landscape severance between the north and south of the modified A2 corridor.</p> <p>Established mitigation planting on the large embankment north-east of the M2/A2/A122 Lower Thames Crossing junction in the adjoining Higham Arable Farmland (sub area Thong) LLCA would help to reduce the perception of earthworks, structures, vehicle</p>	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>movements and highway infrastructure to the west.</p> <p>Ancient woodland compensation planting south of Shorne Ridgeway and Bowesden Lane would help reduce the perception of the A2/M2 corridor and reinforce the wooded landscape character within this part of the LLCA.</p> <p>Night-time environment</p> <p>Between the opening and design years, the establishment of planting along the northern edge of the modified A2 corridor would to some extent help reduce the effects of new lighting on the night-time environment.</p> <p>Summary: design year (summer)</p> <p>Established planting along the north of the A2 corridor would help to restore key characteristics altered during construction. However, less planting would be present overall, with the continued absence of woodland in the former central reservation, resulting in a permanent localised change in the wooded character of the LLCA and slight increased perception of highway infrastructure and vehicle movements.</p>	

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
						<p>Highway infrastructure and viaduct structures at the M2/A2/A122 Lower Thames Crossing junction are likely to remain apparent from the western margin of the LLCA, although in views already influenced by the existing A2 corridor and OHL.</p> <p>By the design year, the Project would result in a slight change to the existing landscape character of the West Kent Downs (sub area Shorne) LLCA.</p> <p><i>Justification for significance level where two significance categories are given in LA 104</i></p> <p>The significance of effect has been assessed as moderate rather than large due to the retention of the existing wooded character beyond the modified A2, with the effects of the Project therefore contained by surrounding woodland.</p>	
West Kent Downs LCA 1A (including the LLCA sub areas of Shorne and Cobham)	Very high (Very high in ES Appendix 7.9)	Moderate adverse (Moderate in ES Appendix 7.9)	Minor adverse (Minor in ES Appendix 7.9)	Large adverse effect (Large in ES Appendix 7.9)	Moderate adverse effect (Moderate in ES Appendix 7.9)	The principal operation effects within the West Kent Downs LCA 1A and key considerations for proposed mitigation would be as described above for the West Kent Downs (sub area Cobham) LLCA and West Kent Downs (sub area Shorne) LLCA.	Refer to the West Kent Downs (sub area Cobham and Shorne) information above

Receptor (LLCA)	Landscape sensitivity	Magnitude and nature of effect		Significance of effect		Commentary	Environmental Masterplan references (Application Document 6.2, Figure 2.4)
		Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)		
<p>Relevant special components, characteristics and qualities from the Kent Downs AONB Management Plan 2021–2026 (Kent Downs AONB Unit, 2021):</p> <ul style="list-style-type: none"> • Dramatic landform and views • Farmed landscape • Woodland and trees (including ancient woodland and veteran trees) and hedgerows • Tranquillity and remoteness (including dark night skies, space, beauty and peace) 						<p><u>Opening year (winter)</u> Within the West Kent Downs (sub area Cobham) LLCA and West Kent Downs (sub area Shorne) LLCAs, change to existing landscape character resulting from the Project would be noticeable. No other changes are required to the text within this commentary when the published LLCA boundary between the West Kent Downs (sub area Cobham) and West Kent Downs (sub area Shorne) LLCAs from the Kent Downs AONB Landscape Character Assessment Update 2020 is used.</p> <p><u>Design year (summer)</u> By the design year, the change to existing landscape character resulting from the Project would be slight. No other changes are required to the text within this commentary when the published LLCA boundary between the West Kent Downs (sub area Cobham) and West Kent Downs (sub area Shorne) LLCAs from the Kent Downs AONB Landscape Character Assessment Update 2020 is used.</p>	

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