

Lower Thames Crossing

9.53 Comments on WRs Appendix A – Statutory Environmental Bodies

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9.53 Comments on WRs

Appendix A – Statutory Environmental Bodies

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REP1-225 Environment Agency

Rep ID	WR Submitter	WR/Applicant's Response
REP1-225	Environment Agency	<p>WR: WR link: REP1-225</p> <p>Applicant's Response:</p> <p><u>Flood Risk</u> New information published since submission of the draft DCO In response to paragraphs 2.2 and 2.3, a meeting was held on 20 June 2023 between the Applicant and the Environment Agency, which included a discussion regarding the updated Thames Estuary 2100 plan. The Applicant is considering whether this has implications for the flood modelling and Flood Risk Assessment and will continue to engage with the Environment Agency on this matter.</p> <p><u>Coalhouse Fort Flood Modelling</u> In response to paragraphs 1.6 and 2.4 to 2.7, the Applicant's position can be found at item 2.1.35 of the Environment Agency's Statement of Common Ground (SoCG) [REP1-058] which is a matter under discussion. A meeting to discuss the flood modelling at Coalhouse Point was held on 20 June 2023, and the model outputs, including a technical note, will be shared with the Environment Agency by the end of August 2023.</p> <p><u>Water resources and quality</u> In response to paragraphs 1.4, 3.2 and 3.3, the Applicant's position can be found at item 2.1.28 of the Environment Agency's SoCG [REP1-058] which is now an agreed matter.</p> <p><u>Terrestrial Biodiversity</u></p> <p><u>Culverting and loss of WFD Habitat</u> In response to paragraphs 1.7, 4.3 and 4.7, the Applicant's position can be found at items 2.1.29 and 2.1.30 of the Environment Agency's SoCG [REP1-058]. The Applicant notes that the Environment Agency acknowledges that culverting is the least environmentally damaging option. In response to paragraphs 1.8 and 4.4, the Applicant's position can be found at items 2.1.31 and 2.1.32 of the Environment Agency's SoCG [REP1-058]. In response to paragraph 4.5, the Applicant's position can be found at items 2.1.30, 2.1.31 and 2.1.34 of the Environment Agency's SoCG [REP1-058].</p>

Rep ID	WR Submitter	WR/Applicant's Response
		<p>In response to paragraph 4.6, the Applicant's position can be found at item 2.1.32 of the Environment Agency's SoCG [REP1-058].</p> <p><u>Permitting and Waste</u></p> <p>In response to paragraph 1.9 the Project is a Nationally Significant Infrastructure Project under the terms of the Planning Act 2008, and benefits from the intent of both the Planning Act 2008 and Government policy to enable development and construction-related consents to be included within the Development Consent Order (DCO). Therefore, where feasible and practical, additional consents have been included within the DCO.</p> <p>However, while the DCO will be the principal consenting mechanism for the development of the Project, at the appropriate stage the application will be supplemented by other consent applications required for specific activities to deliver the development, which are covered by the Environmental Permitting (England and Wales) Regulations (2016).</p> <p>The Consents and Agreements Position Statement [REP1-047] outlines the Applicant's strategy for securing consents and associated agreements needed to implement the Project. It identifies the types of consents and agreements needed to construct and operate the Project, and how the consents and agreements would be obtained.</p> <p>The permits, consents and agreements that may need to be sought separately from the DCO are identified in Appendix A of the Consents and Agreements Position Statement [REP1-047] and in Table 4.2 of Environmental Statement (ES) Appendix 2.2: Code of Construction Practice, First Iteration of Environmental Management Plan [REP1-157].</p> <p>The permits are largely dependent on finalisation of the detailed design, the detailed construction site set-up and methodologies, and discussions with the consenting authorities. Although the Preliminary Design for the Project is well developed, additional detailed design by the selected Contractors will follow DCO consent. This will further inform the permitting process and therefore at this stage in the Project development, it is not possible to apply for permits.</p> <p>However, it was recognised that the environmental permits for using, treating, storing and disposing of excavated material can be complex, especially where third-party operations may be impacted and hence the Project has undertaken extensive early consultation with the Environment Agency since April 2022 to review the nature of the permit(s) required for different scenarios.</p> <p>In response to paragraphs 5.2 to 5.6 the Outline Environmental Permitting Strategy (OEPS) has been developed in collaboration with the Environment Agency and presents the Applicant's understanding of the discussions to date and the options developed to the Environment Agency through a series of workshops.</p>

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		<p>The OEPS document is not proposed to be part of the DCO application or examination but instead seen as a position statement to present the outcomes of the workshops and the Applicant's view of the permit and consent options available for review by the Environment Agency.</p> <p>This strategy is currently intended to be a live document between the Environment Agency and the Applicant which can be updated through the examination period as required to resolve any outstanding issues. At the time of writing the document is going through the final stage of review and will be shared with the Environment Agency shortly.</p> <p>As stated in paragraph 5.6 all permit and consenting solutions are subject to detailed design, and that the strategy may change as further information becomes available.</p> <p>The Environment Agency has made several comments on draft DCO Requirements (Schedule 2) and Protective Provisions at Deadline 1. The Applicant has responded to these comments in the 'Applicant's Response to IP Comments made on the draft DCO at Deadline 1' [REP1-042].</p>

REP1-240 Historic England

Rep ID	WR Submitter	WR/Applicant's Response
REP1-240	Historic England	<p>WR: WR link: REP1-240</p> <p>Applicant's Response:</p> <p>In response to paragraphs 2.6 through 2.49 (Crop mark complex, Orsett), consideration of this can be found in item 2.1.33 of the Statement of Common Ground (SoCG) between the Applicant and Historic England [REP1-061]. Whilst this is an agreed matter in the SoCG, the Applicant thanks Historic England for the additional information in relation to this asset and its significance. This has helped to confirm the conclusions of the assessment.</p> <p>In response to paragraphs 2.50 through 2.54 (Springfield style enclosures and Iron age enclosures south of Hill House, Baker Street), consideration of this can be found in item 2.1.32 of Historic England's SoCG [REP1-061]. Whilst this is an agreed matter in the SoCG, the Applicant thanks Historic England for the additional information in relation to this asset and its significance. This has helped to confirm the conclusions of the assessment.</p> <p>In response to paragraphs 2.55 through 2.62 (Causewayed Enclosure and Anglo-Saxon cemetery 500m EN of Heath Place), consideration of this can be found in item 2.1.32 of Historic England's SoCG [REP1-061]. Whilst this is an agreed matter in the SoCG, the Applicant thanks Historic England for the additional comments in relation to this asset and its significance. This has helped to confirm the conclusions of the assessment.</p> <p>In response to paragraphs 2.62 through 2.71 (Non-designated heritage assets with significant effect (Project ID 247)), asset 247 is identified as high value, experiencing a major magnitude of impact and permanent large adverse significance of effect in Environmental Statement (ES) Chapter 6: Cultural Heritage [AS-044]. In their Relevant Representation Historic England advised that asset 247 should be considered to have equivalent significance with the Orsett crop mark complex scheduled monument (Project ID SM1). The Applicant agrees and therefore in accordance with paragraph 5.124 of the National Policy Statement for National Networks (NPSNN) asset 247 should be considered against the policies relating to designated heritage assets.</p> <p>The Applicant is in agreement as SM1 and asset 247 refer to the same area of related archaeological features, with asset 247 extending the recorded area beyond the boundaries of SM1. NPSNN and the National Planning Policy Framework (NPPF) both acknowledge that the loss wholly or in part of a scheduled monument could be classed as substantial harm. Following the assessment presented within ES Chapter 6: Cultural Heritage [AS-044], and discussions with Historic England, the Applicant acknowledges that the loss of the related non-designated asset 247 amounts to substantial harm. This does not, however, alter the conclusion presented in relation to SM1 (if it is</p>

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		<p>considered together with asset 247 – as reflected throughout the ES) that the need for the Project along with its benefits constitute wholly exceptional circumstances, which justify the substantial harm (complying with paragraphs 5.131 and 5.133 of the NPSNN as demonstrated in the Planning Statement [APP-495]).</p> <p>In order to address the equivalence of asset 247 with SM1, in consultation with Essex Place Services as archaeological advisors to Thurrock and Essex on this matter on 11th July, the Applicant was requested to include asset 247 in commitment CH003 of the Register of Environmental Actions and Commitments (REAC) [REP1-157] and ES Appendix 6.9: Draft Archaeological Mitigation Strategy and Outline Written Scheme of Investigation (dAMS-OWSI) [APP-367]. The Applicant is investigating the feasibility of including specific reference to asset 247 in the REAC commitment CH003 [REP1-157]. Asset 247 is already included within the draft AMS-OWSI [APP-367], where its association with SM1 is clearly stated. Ongoing engagement with Historic England regarding detailed mitigation proposals is informed by the archaeological trial trenching undertaken in this area that covered parts of both SM1 and asset 247, and therefore mitigation is being developed to address the archaeology that is present rather than the boundary of SM1. The Applicant understands that Historic England is agreeable to continue discussions of this matter throughout Examination.</p> <p>In response to paragraphs 3.2 through 3.22 (1-2 Grays Corner Cottages, Orsett, Thurrock, Essex), consideration of this can be found in item 2.1.42 of Historic England's SoCG [REP1-061]. This matter remains under discussion. The Applicant notes the comments raised in relation to this asset and its significance. The Applicant understands that Historic England is agreeable to continue discussions of this matter throughout Examination.</p> <p>In response to paragraphs 3.23 through 3.43 (Murrells Cottage, 1 and 2 Stanford Road, Orsett, Thurrock, Essex), consideration of this can be found in item 2.1.43 of Historic England's SoCG [REP1-061]. This matter remains under discussion. The Applicant notes the comments raised in relation to this asset and its significance. The Applicant understands that Historic England is agreeable to continue discussions of this matter throughout Examination.</p> <p>In response to paragraphs 3.44 through 3.72 (Thatched Cottage, Baker Street, Grays, Thurrock, Essex), consideration of this can be found in item 2.1.22 of Historic England's SoCG [REP1-061]. This matter remains under discussion. The Applicant notes the comments raised in relation to this asset and its significance and potential mitigation options. The Applicant understands that Historic England is agreeable to continue discussions of this matter throughout Examination.</p> <p>In response to Section 4.0 (North of the Thames – Non-designated Built Heritage), consideration of this can be found in item 2.1.3 of Historic England's SoCG [REP1-061]. Whilst this is an agreed matter, the Applicant notes the concerns Historic England has raised regarding the loss of these assets, and agrees with Historic England that appropriate mitigation should be applied to them. The Applicant will discuss the mitigation for the assets with Historic England and will consider the feasibility of increasing the proposed Level 3 Historic Building Recording, as currently</p>

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		<p>set out in the draft AMS-OWSI [APP-367], to Level 4 Historic Building Recording in order to ensure detailed documentary study is undertaken to record the significance of the assets prior to any impact from the Project.</p> <p>In response to paragraphs 5.3 through 5.5 (Cobham Hall Grade II* Registered Park and Garden), consideration of this can be found in items 2.1.23 and 2.1.31 of Historic England's SoCG [REP1-061]. Whilst this is an agreed matter in the SoCG, the Applicant notes Historic England's comments regarding this asset.</p> <p>In response to Section 6.0 (South of the River Thames – Non-designated Built Heritage), consideration of this can be found in item 2.1.18 of Historic England's SoCG [REP1-061]. The Applicant understands that this matter is agreed, as the 'Homes for Heroes' are not proposed for demolition and have been removed from the Order Limits. Nevertheless, the Applicant notes Historic England's comments around the potential impacts in the asset's vicinity. A range of mitigation measures against these impacts can be found in the REAC [REP1-157]. In response to Historic England's comments regarding the value (significance) of these buildings, while they are valued as low individually (experiencing moderate adverse impacts and slight adverse effects in construction and operation) they form an integral part of Thong Conservation Area, which has been assessed as medium value in the ES [A]. The Applicant does not agree with Historic England that these non-designated buildings are of equivalent value with designated assets.</p> <p>The methodology for the assessment of impacts on cultural heritage set out in Section 6.3 Assessment and Methodology of ES Chapter 6: Cultural Heritage [AS-044] is robust, accurate and demonstrates accordance with policy.</p> <p>In response to paragraphs 7.1 to 7.3, the preliminary works referred to in section 3 of the REAC [REP1-157] are limited to the activities set out in Table 3.1. These relate to the development of ecological mitigation and preparation for compound construction. As such the inclusion of recording designated assets prior to their demolition would not be appropriate.</p> <p>In response to paragraph 7.4, this has been noted.</p> <p>In response to paragraphs 7.5 to 7.18, the Applicant thanks Historic England for their comments on these documents which will be considered when making any revisions.</p> <p>In response to paragraphs 7.20 to 7.38, the Applicant welcomes the positive comments from Historic England and the advice on additional resources and guidance.</p> <p>In response to Section 8, the Applicant will consider the proposed updated DCO wording provided by Historic England, and will respond in due course.</p> <p>In response to Historic England's comments on ES Appendix 6.13: Holocene Geoarchaeological Desk-based Assessment of the Route of the Lower Thames Crossing [APP-371], this document is currently being revised and will</p>

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		be shared with key heritage stakeholders in the near future. The intention of the document is to inform the research agenda and future mitigation as set out in Site Specific Written Schemes of Investigation.

REP1-255 Marine Management Organisation

Rep ID	WR Submitter	WR/Applicant's Response
REP1-255	Marine Management Organisation	<p>WR: WR link: REP1-255</p> <p>Applicant's Response: In response to 1.1 and 1.2, the Statement of Common Ground (SoCG) between the Applicant and the Marine Management Organisation (MMO) is still being developed and updated [APP-098]. New matters have been added to address the comments raised by the MMO in its Relevant Representations. The document is currently being reviewed by the MMO, and an updated SoCG will be submitted at Deadline 3. The Applicant will also seek a meeting with the MMO to resolve outstanding concerns about Development Consent Order and Deemed Marine Licence (DML) drafting.</p> <p>In response to 2.1, 2.2 and 2.3, the Applicant's position can be found in item 2.1.3 of the MMO's SoCG [APP-098]. An updated SoCG will be submitted at Deadline 3.</p> <p>In response to 2.4 and 2.5, the Applicant's position can be found in items 2.1.1 and 2.1.2 of the MMO's SoCG [APP-098] as well as its post-hearing submissions on Issue Specific Hearing 2. An updated SoCG will be submitted at Deadline 3.</p> <p>In response to 2.7, the Applicant's consideration of the South East Inshore and Marine Plan is presented in Section 7.4 of the Planning Statement [APP-495].</p>

REP1-262 Natural England

Rep ID	WR Submitter	WR/Applicant's Response
REP1-262	Natural England	<p>WR: WR link: REP1-262</p> <p>Applicant's Response: The Applicant notes and welcomes Natural England's recognition of the collaborative approach to discussions which has enabled the full resolution of many matters as detailed in the joint Statement of Common Ground.</p> <p>The Applicant's interpretation of Natural England's Written Representation is that they have two main areas of residual concern. Natural England's first concern appears to be that the Application relies on an outline design, which makes it difficult for them to assess the acceptability of the measures proposed to avoid, mitigate or compensate for impacts, and so provide sufficient certainty in the environmental assessments' conclusions and compliance with policy. Their second concern appears to be that the Application lacks sufficient certainty within the control documents that the proposed measures are secured and would be delivered to an acceptable standard.</p> <p>The Applicant does not agree with Natural England that the information within the DCO application is insufficient to be certain of the conclusions of the Environmental Assessments. The Applicant does not consider that greater detail of design at this stage is desirable or appropriate and that the objectives of ecological mitigation and compensation are adequately secured in the control documents.</p> <p>Responses to the specific paragraphs within Natural England's Written Representation are detailed below, however, to avoid repetition, the Applicant has summarised Natural England's key concerns according to theme and has provided responses to these in Annex A.</p> <p>1. Draft Development Consent Order and securing mechanisms Natural England made a number of comments in regard to the draft Development Consent Order and Securing Mechanisms. The Applicant has responded to these comments in the 'Applicant's Response to IP Comments made on the draft DCO at Deadline 1' [REP1-042].</p> <p>3. Proposed Lower Thames Crossing Advisory Group In response to paragraphs 3.1.15 - 3.1.18 and 3.1.23, the Applicant's position can be found at item 2.1.2 of Natural England's SoCG [APP-099]. The Applicant will consider Natural England's requested changes to the Terms of</p>

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		<p>Reference of the Advisory Group and will provide a response at a future deadline. The Applicant will also consider Natural England's request for a cost recovery agreement for non-statutory advice.</p> <p>Securing Mitigation and Compensation Land</p> <p>In response to paragraphs 3.1.19 and 3.1.24, the commitment to management of mitigation and compensation measures in perpetuity will be added to the outline Landscape and Ecology Management Plan (oLEMP) [REP1-173] at its next revision.</p> <p>4. Internationally Designated Sites</p> <p><u>Air Quality Impacts</u></p> <p>Epping Forest SAC- operational air quality impacts</p> <p>In response to paragraphs 4.1.4 – 4.1.17, the Applicant's position can be found at item 2.1.94 and Annex C.7 of Natural England's SoCG [APP-099].</p> <p>Nitrogen Oxide Assessment and Methodology</p> <p>In response to paragraphs 4.1.18 – 4.1.38, the Applicant's position can be found at item 2.1.91 and Annex C.12 of Natural England's SoCG [APP-099] and in the 'Without prejudice assessment of the air quality effects on European sites following Natural England advice' [Document Reference 9.57].</p> <p>North Downs Woodland SAC- operational air quality impacts</p> <p>In response to paragraphs 4.1.39 – 4.1.47, the Applicant's position can be found at item 2.1.91 and Annex C.12 of Natural England's SoCG [APP-099] and in the 'Without prejudice assessment of the air quality effects on European sites following Natural England advice' [Document Reference 9.57].</p> <p>In-combination Assessment</p> <p>In response to paragraphs 4.1.48 – 4.1.57, the Applicant's position can be found at item 2.1.90 and Annex C.12 of Natural England's SoCG [APP-099] and in the 'Without prejudice assessment of the air quality effects on European sites following Natural England advice' [Document Reference 9.57].</p>

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		<p>Nitrogen Deposition Methodology</p> <p>In response to paragraphs 4.1.58 – 4.1.59, the Applicant's position can be found at item 2.1.96 of Natural England's SoCG [APP-099] and in the 'Without prejudice assessment of the air quality effects on European sites following Natural England advice' [Document Reference 9.57].</p> <p><u>Impacts to land functionally linked to the Thames Estuary and Marshes Special Protection Area and Ramsar site</u></p> <p>In response to paragraphs 4.2.1 – 4.2.15, the Applicant's position can be found at item 2.1.93 and Annex C.13 of Natural England's SoCG [APP-099].</p> <p>5. Nationally Designated Sites</p> <p><u>Shorne and Ashenbank Woods SSSI</u></p> <p>In response to paragraphs 5.1.1, 5.1.3 – 5.1.4, 5.1.10 – 5.1.12 and 5.1.18 – 5.1.20, the Applicant's position can be found at items 2.1.7 and 2.1.8 of Natural England's SoCG [APP-099]. Annex C.9 of Natural England's SoCG sets out the compensation provided for impacts to Shorne and Ashenbank Woods SSSI.</p> <p>In response to paragraph 5.1.2, the Applicant has reviewed the information provided by Natural England in relation to the error in their publicly available dataset indicating the boundary of Shorne and Ashenbank Woods SSSI. Detail of the habitats and areas within the SSSI affected by the Project were reported in a Technical Note on Shorne and Ashenbank Woods SSSI compensation provided to Natural England on 1 June 2023 (also included as Annex C.9 of Natural England's SoCG [APP-099]). This included a detailed map showing which areas of habitat are specifically being created to compensate for the loss of habitats from within the Shorne and Ashenbank Woods SSSI.</p> <p>The Applicant has calculated that an additional 1.12ha of habitat within the Project Order Limits would fall within the boundary of the SSSI which Natural England has now provided, increasing the total area of SSSI affected by the Project from 5.85ha to 6.97ha. Table 1 within the Technical Note (Annex C.9 of Natural England's SoCG [APP-099]) details those habitats within the SSSI affected by the Project. This has been updated below with the inclusion of a third column detailing the revised area of habitat lost. Where figures have changed, these have been emboldened:</p> <p>Table 1: Habitat type and areas within Shorne and Ashenbank Woods SSSI lost as a result of the Project. (Taken from the Technical Note on Shorne and Ashenbank Woods SSSI compensation)</p>

Rep ID	WR Submitter	WR/Applicant's Response												
		Habitat type	Area of habitat lost	Revised area of habitat lost										
		Ancient woodland	0.95ha	0.95ha										
		Semi-natural woodland	1.80ha	1.80ha										
		Plantation woodland	0.81ha	1.93ha										
		Open mosaic habitats	0.91ha	0.91ha										
		Hardstanding	1.38ha	1.38ha										
		TOTAL	5.85ha	6.97ha										
		<p>Table 2 in the Technical Note (Annex C.9 of Natural England's SoCG [APP-099]) details the area of habitat creation proposed to compensate for the loss of those habitats reported in Table 1 above. The area of compensation habitat proposed has not been revised but the approximate ratio of area created against that being lost has been updated in the final column of the table to allow comparison. Where figures have changed, these have been emboldened. (N.b. The column providing justification for inclusion as compensation in the original Technical Note has been omitted for ease of presentation).</p> <p>Table 2: Compensation habitat type proposals and rationale for their inclusion. (Taken from the Technical Note on Shorne and Ashenbank Woods SSSI compensation)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #333333; color: white;">Habitat type lost</th> <th style="background-color: #333333; color: white;">Compensation habitat type (landscape typology given in brackets)</th> <th style="background-color: #333333; color: white;">Area of compensation habitat proposed</th> <th style="background-color: #333333; color: white;">Approximate ratio of area created for compensation to that being lost</th> <th style="background-color: #333333; color: white;">Revised approximate ratio of area created for compensation to that being lost</th> </tr> </thead> <tbody> <tr> <td>Ancient woodland</td> <td>Ancient woodland compensation planting (LE8.2) Plate 2 below</td> <td>9.1ha</td> <td>9.6 : 1</td> <td>9.6 : 1</td> </tr> </tbody> </table>			Habitat type lost	Compensation habitat type (landscape typology given in brackets)	Area of compensation habitat proposed	Approximate ratio of area created for compensation to that being lost	Revised approximate ratio of area created for compensation to that being lost	Ancient woodland	Ancient woodland compensation planting (LE8.2) Plate 2 below	9.1ha	9.6 : 1	9.6 : 1
Habitat type lost	Compensation habitat type (landscape typology given in brackets)	Area of compensation habitat proposed	Approximate ratio of area created for compensation to that being lost	Revised approximate ratio of area created for compensation to that being lost										
Ancient woodland	Ancient woodland compensation planting (LE8.2) Plate 2 below	9.1ha	9.6 : 1	9.6 : 1										

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		Semi-natural woodland	Woodland (LE2.1) Plate 3a and 3b below	10.6ha	4.0 : 1	2.8 : 1
		Plantation woodland				
		Open mosaic habitats	Open mosaic habitats (LE8.1) Plate 4 below	12.8ha	14.1 : 1	14.1 : 1
		<p>This review of the implications of the error Natural England highlighted in the publicly available dataset for the boundary of Shorne and Ashenbank Woods SSSI has shown that it results in the loss of more plantation woodland from within the boundary of the SSSI. It is important to note that this is not an overall increase in habitat lost from within the Order Limits of the Project but a change in the amount of designated SSSI habitat affected.</p> <p>As Natural England acknowledge in paragraph 5.1.2 of their Written Representation this area will have been significantly affected by the construction and operation of both the Channel Tunnel Rail Link/High Speed 1 Rail Line and also the A2/M2 widening works and therefore the quality of the plantation woodland habitat within this area is lower than that of the mature and ancient woodland found in both Shorne Wood to the north and Ashenbank Wood to the south. Impacts to the more valuable ancient woodland and open mosaic habitats within the SSSI boundary remain unchanged, as do the compensation ratios for them presented in Table 2 above. There is however a reduction in the ratio for semi-natural and plantation woodland compensation as a result of this boundary change.</p> <p>The assessment of likely significant effects from the direct loss of habitat within the boundary of Shorne and Ashenbank Woods SSSI is reported in Environmental Statement (ES) Chapter 8: Terrestrial Biodiversity [APP-146], paragraphs 8.6.9 to 8.6.11. This concludes that there would be a permanent impact to the SSSI but that this would not affect the site's overall integrity. This would therefore result in a moderate adverse effect which would be significant. Although this change in the SSSI boundary results in a larger overall area of the SSSI being affected, the habitat is acknowledged as being of lower quality than that within the two woodlands north and south of it. It is therefore considered that the SSSI integrity would still remain with this increase in area loss and therefore the conclusion presented within the application remains robust.</p> <p>In response to paragraphs 5.1.5 – 5.1.9 and 5.1.20, the Applicant's position can be found at item 2.1.42 of Natural England's SoCG [APP-099]. The Applicant also provided a technical note to Natural England on 7 July 2023, as detailed in Annex C.14 of Natural England's SoCG [APP-099]. This technical note was also submitted at Examination Deadline 1 as Appendix A of the Addendum to the Environmental Statement [REP1-181].</p>				

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		<p>In response to paragraph 5.1.13, the Applicant's position can be found in Annex A and also in the Applicant's response to the matters specifically raised by Natural England in 'Section 13: Management and Monitoring of mitigation and compensation measures' below.</p> <p>In response to paragraphs 5.1.14 and 5.1.16, the Applicant's position can be found at item 2.1.64 of Natural England's SoCG [APP-099]. REAC commitment TB028 'Ancient Woodland Soil Translocation' states that areas identified on the Environmental Masterplan for compensatory ancient woodland planting to offset the loss of ancient woodland would be inoculated, where reasonably practicable, with soils from ancient woodland sites within Order Limits (as identified on ES Figure 8.1 [APP-262]) that would be disturbed by construction activity.</p> <p>In response to paragraph 5.1.17, the Applicant's position can be found in the Applicant's response to the matters specifically raised by Natural England in 'Section 6: Nationally protected landscapes' below.</p> <p><u>South Thames Estuary and Marshes SSSI</u></p> <p>In response to paragraphs 5.2.1 - 5.2.9, the assessment of likely effects on South Thames Estuary and Marshes SSSI is reported in ES Chapter 8: Terrestrial Biodiversity [APP-146], paragraphs 8.6.18 - 8.6.25, with paragraphs 8.6.24 and 8.6.25 specifically addressing disturbance of species present. The Applicant recognises the concern raised by Natural England around disturbance to breeding bird species within the SSSI boundary, notably from works in the A226 Gravesend Road compound and the Milton compound which are adjacent to the boundary of the SSSI. Within ES Appendix 2.2: Code of Construction Practice, First Iteration of Environmental Management Plan (CoCP) [REP1-157], REAC commitment HR004 commits to installing noise attenuation at these two compounds between April and July. Further REAC commitments TB002, TB004 and TB006 address potential disturbance issues to sensitive ecological receptors including breeding birds through the provision of and supervision of works such as fence installation by an Ecological Clerk of Works. In particular, TB004 states that, where timing of disturbing works is not possible, appropriate measures would be taken to avoid harming birds or their nests and this would be supervised by an Ecological Clerk of Works. It is also relevant that both these compounds are separated from the SSSI boundary by the Lower Higham Road (A226 Gravesend Road compound), and the Gravesend to Higham railway line (Milton compound) which are a source of frequent but irregular noise and visual disturbance to any birds within the SSSI which would therefore likely be habituated to such disturbance. The Applicant does however recognise there is potential for some disturbance but concludes in paragraph 8.6.25 that this would be temporary and would not affect the integrity of the site or its key characteristics, including those of the breeding bird assemblage associated with the site. The negligible adverse impact would result in a slight adverse effect which is not significant.</p>

6. Nationally Protected Landscapes

In response to **paragraphs 6.1.1 and 6.1.2**, the Applicant's position can be found at items 2.1.7 and 2.1.9 of Natural England's SoCG [[APP-099](#)].

In response to **paragraph 6.1.3, 6.1.4 and 6.1.7**, the boundaries of the Local Landscape Character Areas (LLCA) within the Kent Downs AONB have not been incorrectly transposed. As detailed in Paragraph 7.3.58 of ES Chapter 7: Landscape and Visual [[APP-145](#)]:

'The above landscape character studies [Kent Downs AONB Landscape Character Assessment Update, Draft (Kent Downs AONB Unit, 2020) unpublished as of 15 September 2022] and the boundaries of character areas identified in the studies have been used to inform the definition of the LLCAs, which have been used as a basis for the assessment of effects on the landscape at the local level. In a limited number of locations, the boundaries of the published character areas have been slightly adjusted through detailed study and analysis undertaken for the LVIA in this chapter.'

From the Applicant's review of the West Kent Downs (sub area Cobham) Local Landscape Character Area (LLCA) and from their site visits, the Applicant has concluded that HS1 and the associated planting strongly define the northern extent of the Cobham sub area and it therefore made sense for the Shorne sub area to incorporate the whole width of the A2 corridor, beyond HS1.

However, notwithstanding the slight difference in the West Kent Downs (sub area Cobham) LLCA boundary shown on Figure 7.2 compared with the Kent Downs AONB Landscape Character Assessment, the effects of the Project are fully assessed either as direct or indirect effects within the West Kent Downs (sub area Cobham) LLCA and/ or the neighbouring West Kent Downs (sub area Shorne) LLCA.

The effects on both the West Kent Downs (sub area Cobham) LLCA and on the West Kent Downs (sub area Shorne) LLCA are assessed in Tables 2.3 and 3.3 of ES Appendix 7.9 [[APP-384](#)]. The findings of these two assessments are then brought together into a combined assessment for the overarching West Kent Downs Landscape Character Area (LCA) 1A identified in the Kent Downs AONB Landscape Character Assessment Update. The combined effects reported in the landscape impact summary Tables 7.33 and 7.34 in Section 7.9 of ES Chapter 7: Landscape and Visual [[APP-145](#)] and the overall conclusion of the landscape and visual impact assessment would therefore not differ if the Cobham and Shorne sub area boundary is drawn in a different location.

In response to **paragraph 6.1.5**, the Applicant's position can be found at item 2.1.24 of Natural England's SoCG [[APP-099](#)], and Table 7.2 of ES Chapter 7: Landscape and Visual [[APP-145](#)], which confirms that photomontage locations were agreed with Natural England at a site visit on 19 June 2019, following consultation. Additional visualisations, as presented in ES Chapter 7: Landscape and Visual [[APP-145](#)] were produced as required.

In response to **paragraphs 6.1.6, 6.1.8 and 6.1.9**, the methodology for the landscape and visual impact assessment is set out in Section 7.3 of ES Chapter 7: Landscape and Visual [[APP-145](#)] and ES Appendix 7.2: Landscape and

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		<p>Visual Assessment Methodology [APP-377] and has been appropriately applied to assess the realistic worst case effects likely to arise from the Project described in the DCO application submitted in October 2022.</p> <p>There have been several Project design changes and further development of the Project definition since the DCO application made in October 2020 was withdrawn. The current ES Chapter 7: Landscape and Visual therefore reflects these design changes and a greater level of certainty around the likely effects of the Project following further design development, in particular relating to proposed utilities diversions along the M2/A2 corridor. Furthermore, the definition of baseline landscape and visual conditions has also been critically reviewed and updated since October 2020. The ES Chapter 7: Landscape and Visual [APP-145] submitted with the current DCO application should therefore be read as a standalone assessment and not compared to the version that was withdrawn in late 2020. The version of ES Chapter 7: Landscape and Visual contained in the withdrawn DCO application is of no relevance to the current application.</p> <p>In response to paragraph 6.1.7, Table 1.3: Local Landscape Character Areas (LLCAs) susceptibility to specific change of ES Appendix 7.9: Schedule of Landscape Effects [APP-384] sets out an intermediate step to assessing the sensitivity of landscape receptors, derived from guidance in DMRB LA 107 Landscape and Visual Effects (Highways England, 2020a). As explained in the commentary provided in Table 1.3 for the West Kent Downs (sub area Cobham) Local Landscape Character Area (LLCA), <i>'due to the presence of the existing A2 corridor and HS1 along the northern boundary of this LLCA, the receptor has some ability to accommodate the Project without substantial loss of its overall integrity.'</i></p> <p>However, the landscape sensitivity of the West Kent Downs (sub area Cobham) LLCA has been assessed as high, which is consistent with the descriptors provided for landscape sensitivity in DMRB LA 107 Landscape and Visual Effects (Highways England, 2020a): <i>'Landscapes of high national importance containing distinctive features/elements with limited ability to accommodate change without incurring substantial loss/gain (i.e. designated areas, areas of strong sense of place – registered parks and gardens, country parks)',</i> as set out in Table 7.3 of ES Chapter 7: Landscape and Visual [APP-145].</p> <p>In response to paragraph 6.1.11, it is acknowledged in the Written Representation that DMRB LA 107 Landscape and Visual Effects (Highways England, 2020a) does not require presentation of a separate assessment of the value of views and the susceptibility of visual receptors to change in the assessment of visual sensitivity. However, factors relating to the value of views and the susceptibility of viewers are incorporated into the typical descriptors of visual sensitivity set out in DMRB LA 107 and have been taken into account in the visual impact assessment presented in ES Appendix 7.10: Schedule of Visual Effects [APP-385]. This approach therefore accords with the best practice guidance in the Guidelines for Landscape and Visual Impact Assessment (Third edition) (Landscape Institute and Institute of Environmental Management and Assessment, 2013).</p>

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		<p>In response to paragraph 6.1.15, should the design change regarding the Blue Bell Hill and Burham nitrogen deposition compensation areas be accepted, Application documents would be updated in line with our Lower Thames Crossing Notification of Proposed Changes to the Planning Inspectorate [AS-083] submitted in March 2023.</p> <p>In response to paragraphs 6.1.21 and 6.1.22, Representative Viewpoint S-12 shown on ES Figure 7.16: Visual Effects Drawing with Representative Viewpoint and Photomontage Locations [REP1-128] is located on the southern approach to Brewers Road bridge and at a slightly lower level than the bridge deck. The existing woodland in the central reservation does not therefore feature prominently in this angle of view.</p> <p>By the design year, the widened M2/A2 corridor would be largely screened by the proposed planting mitigation shown on ES Figure 2.4: Environmental Masterplan Sections 1 & 1A (1 of 10) [APP-159] and the new Brewers Road green bridge structure would be slightly less prominent than the existing bridge structure, as shown in the photomontage in ES Figure 7.19: Photomontages - Winter Year 1 and Summer Year 15 (1 of 4) [APP-244]. A slight beneficial significance of effect was therefore assessed from this viewpoint.</p> <p>In response to paragraphs 6.1.23 to 6.1.26, views of the M2/A2 corridor from Representative Viewpoint S-13 and Representative Viewpoint S-14 shown on ES Figure 7.16: Visual Effects Drawing with Representative Viewpoint and Photomontage Locations [REP1-128] would be largely screened by proposed planting on both sides of Brewers Road green bridge by the design year. This compares with the existing view where the existing road and traffic are clearly visible from the bridge, as shown in the photomontages in ES Figure 7.19: Photomontages - Winter Year 1 and Summer Year 15 (1 of 4) [APP-244]. A slight beneficial significance of effect was therefore assessed from these viewpoints.</p> <p>In response to paragraph 6.1.27, discussion with Natural England, has identified an opportunity to enhance the user experience of Brewers Road green bridge and Thong Lane green bridge south, through the detailed distribution and design of the environmental mitigation areas on both bridges. To make provision for this enhanced design and provide greater certainty on delivery, it is proposed to supplement the existing clause S1.04 and delete existing clause S1.17 of the Design Principles [APP-516]. The amended principles will be submitted into Examination when the Design Principles are next updated.</p> <p>In response to paragraph 6.1.28, the Gravesend Southern Fringe LLCA is shown on ES Figure 7.2: Local Landscape Character Areas [APP-198]. As explained in ES Appendix 7.9: Schedule of Landscape Effects [APP-384] the relatively narrow linear LLCA comprises a typically urban fringe landscape between Gravesend and HS1, dominated by the existing A2 corridor. Given the character of the existing landscape and the nature of the Project proposals, the key characteristics of this landscape would remain largely unaffected, apart from the removal of some tree planting at the Gravesend East junction, which would slightly increase the perception of the A2 corridor.</p>

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		<p>In response to paragraphs 6.1.29 and 6.1.30, it is acknowledged that the proposed mitigation planting shown on ES Figure 2.4: Environmental Masterplan Sections 1 & 1A (1 of 10) [APP-159], Environmental Masterplan Section 2 (2 of 10) [APP-160] and Environmental Masterplan Section 3 (3 of 10) [APP-161] would not fully replace the mature woodland and trees lost to facilitate construction of the Project.</p> <p>Paragraph 7.3.92 of ES Chapter 7: Landscape and Visual [APP-145] sets out assumed growth rates for proposed mitigation planting by the design year, 15 years after road opening. The difference in assumed growth rates when compared with the size of existing mature trees has been taken into account in the assessment in ES Appendix 7.9: Schedule of Landscape Effects [APP-384]. Appendix 7.9 reports a significant adverse effect on the landscape character of the West Kent Downs (sub area Shorne) LLCA in the design year but no significant adverse effect on the landscape character of the West Kent Downs (sub area Cobham) LLCA in the opening year or design year as the key characteristics of the landscape would be largely unaffected.</p> <p>In response to paragraph 6.1.31, paragraph 7.3.2 of ES Chapter 7: Landscape and Visual [APP-145], explains that visual effects are assessed on visual receptors primarily represented by Representative Viewpoints. 102 representative viewpoints have been identified, selected to represent the experience of different types of visual receptor from a range of viewpoints along the Project route within the landscape and visual study area. A detailed assessment for these Representative Viewpoints is provided in ES Appendix 7.10: Schedule of Visual Effects [APP-385].</p> <p>The visual impact assessment from Representative Viewpoints has been supplemented by an assessment of the visual effects from well over 400 other visual receptors, also set out in ES Appendix 7.10: Schedule of Visual Effects [APP-385]. For these other visual receptors, a baseline description is provided for each in ES Appendix 7.7: Representative Viewpoint and Visual Receptor Baseline Descriptions and Visual Sensitivity [APP-382], with an assessment of magnitude and significance levels provided in ES Appendix 7.10: Schedule of Visual Effects [APP-385]. This is considered to be a proportionate approach to the visual impact assessment.</p> <p>In response to paragraph 6.1.39, the effects on tranquillity and on the night-time environment in each Local Landscape Character Area are assessed in ES Appendix 7.9: Schedule of Landscape Effects [APP-384]. The LVIA study area includes the M2/A2 corridor between M2 junction 1 (the M2/A2/A289 interchange) to the east and Gravesend to the west. Additional assessment in ES Appendix 7.11: Traffic and Noise Effects on the Kent Downs Area of Outstanding Natural Beauty [REP1-162] considers the effects of noise and visual disturbance resulting from the Project on relative tranquillity within the wider AONB.</p> <p>The Applicant's assessment shows that there would be localised impacts on tranquillity during construction and following completion of the Project. As detailed in commitment NV013 'Road Surfacing' of the Register of Environmental Actions and Commitments (REAC) in ES Appendix 2.2: CoCP [REP1-157], low-noise road surfaces</p>

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		<p>would be installed on all new and affected roads, including all new sections of the A2/M2 and the M2/A2/A122 Lower Thames Crossing junction as part of the upgrade works to reduce road traffic noise by up to -3.5 decibels (dB). Low noise road surfacing is also proposed for the local roads crossing the A2, this will reduce road traffic noise by approximately -1.0dB.</p> <p>In response to paragraph 6.1.42, since the DCO application, the Applicant has made an amendment to the assessment of effects on the relative tranquillity of the wider AONB in ES Appendix 7.11: Traffic and Noise Effects on the Kent Downs Area of Outstanding Natural Beauty (Tracked changes version) [REP1-163]. The amendment was made to reflect corrections to some predicted traffic flows shown on traffic maps in supporting figures ES Figure 7.20.1: Traffic effects on Kent Downs AONB during construction (1 to 6) (Tracked Changes Version) [REP1-132, REP1-134, REP1-136, REP1-138, REP1-140, REP1-142] and ES Figure 7.20.2: Traffic effects on Kent Downs AONB during operational year 2030 and 2045 (Tracked Changes Version) [REP1-145]. In addition to the adverse effects noted in Natural England's Written Representation, the amended Appendix 7.11 also identifies adverse effects along the Cobhambury Road, Warren Road and Bush Road route between Cuxton and Cobham and in Cobham at the design year.</p> <p>In response to paragraph 6.1.43, ES Figure 12.6: Operational Road Traffic Noise Mitigation [APP-314] shows that there are no acoustic barriers proposed to the south of the River Thames, including within the Kent Downs AONB.</p> <p>In response to paragraphs 6.1.45 and 6.1.46, the Applicant's position can be found at item 2.1.32 of Natural England's SoCG [APP-099].</p> <p>Cumulative effects</p> <p>In response to paragraphs 6.1.47, the Applicant's position can be found at item 2.1.15 of Natural England's SoCG [APP-099].</p> <p>Mitigation measures</p> <p>In response to paragraph 6.1.50, the Applicant's position can be found at item 2.1.41 of Natural England's SoCG [APP-099]. The Applicant has committed to use only native species within the Kent Downs AONB, and on green bridges. Ancient woodland compensation planting is proposed to the north of Park Pale bridge, to the east of Shorne Woods Country Park, as shown on ES Figure 2.4: Environmental Masterplan Sections 1 & 1A (1 of 10) [APP-159]. Clause S1.08 of the Design Principles [APP-516] requires the design of this woodland to retain key views from the upper slopes of the new woodland planting area across the M2/A2 corridor to the Darnley Mausoleum within Cobham Park Registered Park and Garden of Special Historic Interest, as well as views to the wider Kent Downs AONB. This</p>

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		<p>includes Representative Viewpoint S-03, shown on ES Figure 7.16: Visual Effects Drawing with Representative Viewpoint and Photomontage Locations [REP1-128].</p> <p>The use of non-native species is not proposed within the AONB. The reference to non-native species at pages 34 and 35 of the Project Design Report: Part D General Design South of the River [APP-509] was an error.</p> <p>In response to paragraph 6.1.51, the Applicant will consider Natural England's request for additional information, and will provide a response at a future deadline.</p> <p>In response to paragraphs 6.1.53 and 6.1.55, the Applicant's position can be found at item 2.1.102 of Natural England's SoCG [APP-099]. As detailed in Annex A, the Applicant considers that the control documents are sufficient to secure the objectives of ecological mitigation. Item 2.1.100 of Natural England's SoCG [APP-099] also confirms that Natural England considers the outline Landscape and Ecology Management Plan (oLEMP) Advisory Group to be an appropriate forum to develop the design of nitrogen compensation land.</p> <p>Essential Mitigation</p> <p>In response to paragraph 6.1.54, the Applicant's position can be found at item 2.1.39 of Natural England's SoCG [APP-099].</p> <p>In response to paragraph 6.1.56, the Applicant's position can be found at item 2.1.21 of Natural England's SoCG [APP-099].</p> <p>Visualisations</p> <p>In response to paragraph 6.1.58, it is acknowledged that there is an error in photomontage viewpoint S-05a shown in ES Figure 7.19: Photomontages Winter Year 1 and Summer Year 15 (1 of 4) [APP-244]. The photomontage incorrectly shows the full reinstatement of existing planting between the M2/A2 corridor and HS1. The Summer Year 15 photomontage view will be corrected to show the actual extent of reinstatement planting likely to have been achieved 15 years after opening of the widened road corridor and re-issued at Deadline 3.</p> <p>In response to paragraph 6.1.59, clause S1.08 of the Design Principles [APP-516] requires the design of this woodland to retain key views from the upper slopes of the new woodland planting area across the M2/A2 corridor to the Darnley Mausoleum within Cobham Park Registered Park and Garden of Special Historic Interest, as well as views to the wider Kent Downs AONB. This includes Representative Viewpoint S-03, shown on ES Figure 7.16: Visual Effects Drawing with Representative Viewpoint and Photomontage Locations [REP1-128]. The detailed design of proposed woodland planting would need to be developed to demonstrate application of this design principle in a</p>

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		<p>photomontage. It is not therefore intended to provide an additional photomontage from this location in advance of the detailed design stage.</p> <p>Representative Viewpoint S-08; The existing visibility of the A2 and HS1 corridors is shown in the baseline photograph for Representative Viewpoint S-08 within ES Figure 7.17: Representative Viewpoints - Winter and Summer Views (1 of 8) [APP-235]. The existing A2 and HS1 corridors are only visible from a short break in the existing vegetation along the north side of the footpath. On establishment of mitigation planting, the view at design year is not anticipated to be notably different to existing, apart from an increased perceptibility of highway infrastructure and the tops of high-sided vehicles. It is therefore considered that a photomontage view is not necessary from this location.</p> <p>Representative Viewpoint S-11; The Applicant will consider preparation of an additional photomontage from Representative Viewpoint S-11 shown on Figure 7.16: Visual Effects Drawing with Representative Viewpoint and Photomontage Locations [REP1-128].</p> <p>Summary of further information / mitigation measures requested by Natural England</p> <p>In response to paragraph 6.1.61, ES Appendix 7.11: Traffic and Noise Effects on the Kent Downs Area of Outstanding Natural Beauty [REP1-162] provides an assessment of the traffic and noise effects on the Kent Downs AONB. Paragraph 6.2.2 of Appendix 7.11 confirms that:</p> <p><i>'In the opening year, the only significant adverse change in noise levels within the AONB as a result of the Project would be two small pockets of moderate adverse change along the A228 corridor to the north-east and south-west of Cuxton' and at paragraph 6.2.3 that:</i></p> <p><i>'By 2045, [the design year] there would be no significant change in noise levels resulting from the Project across the whole of the AONB, except for a small pocket of moderate beneficial change in noise levels along the M2/A2 corridor close to the proposed M2/A2/A122 Lower Thames Crossing junction.'</i></p> <p>ES Appendix 12.10: Road Traffic Noise Mitigation and Cost Benefit Analysis [APP-450] details the appraisal undertaken to inform the conclusions relating to the acoustic mitigation strategy for operational road traffic noise.</p> <p>In response to paragraph 6.1.62, the Applicant's position on the use of natural finishes appropriate to the AONB can be found at item 2.1.38 of Natural England's SoCG [APP-099].</p> <p>Consideration of the colour of materials used and finishes to the built structures can be found at item 2.1.39 of Natural England's SoCG [APP-099].</p>

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		<p>The Applicant does not consider that there is justification to deliver a green bridge at Park Pale because it is not needed to mitigate the impacts of the Project identified in the environmental assessment. Furthermore, there is extensive replacement tree and shrub planting and ancient woodland compensation planting proposed in the Park Pale area to help reduce the landscape and visual effects associated with the Project.</p> <p>In relation to woodland planting, it is assumed that Natural England mean 'woodland planting to the north of High Speed 1 Rail Line', since the existing mature woodland to the south of HS1 would be retained, apart from the removal of a small group of existing trees adjacent to Brewers Road.</p> <p>Space for proposed reinstatement planting to the north of HS1 (between the railway line and M2/A2 corridor) is limited and constrained by utility corridors. Therefore, to create a sense of woodland character, proposed mitigation planting shown on ES Figure 2.4: Environmental Masterplan Sections 1 & 1A (1 of 10) [APP-159] and Environmental Masterplan Section 2 (2 of 10) [APP-160] comprises:</p> <p>A linear belt of shrubs and trees between the M2/A2/A12 Lower Thames Crossing junction and the Halfpence Lane roundabout, shrubs with intermittent trees between the Halfpence Lane roundabout and Brewers Road green bridge and a principally linear belt of shrubs and trees between Brewers Road green bridge and Park Pale bridge.</p> <p>No acoustic barriers are proposed within the Kent Downs AONB. ES Appendix 12.10: Road Traffic Noise Mitigation and Cost Benefit Analysis [APP-450] details the appraisal undertaken to inform the conclusions relating to the acoustic mitigation strategy for operational road traffic noise.</p> <p>Clause LSP.02 of the Design Principles [APP-516] states that proposed planting mixes 'will include native species of local provenance'.</p> <p>The commitment to use of naturalistic edges around attenuation ponds can be found at item 2.1.85 of Natural England's SoCG [APP-099].</p> <p>The application of relaxations within the design of the side roads will be applied where required under standard design practice with the overseeing/ adopting authorities approval process being followed. The adopting authority will be consulted on side road designs and any relaxations from standards that are applied. The local design standards and guidance will be used on the adoptable side roads.</p> <p>7. Natural England's work considering a potential SSSI notification in the Tilbury area</p> <p>In response to paragraph 7.1.8, the Applicant's position can be found at item 2.1.67 and Annex C.15 of Natural England's SoCG [APP-099].</p>

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		<p>Open Mosaic Habitat</p> <p>In response to paragraphs 7.1.9 and 7.2.10, the Applicant's position can be found at item 2.1.48 and item 2.1.103 of Natural England's SoCG [APP-099]. As detailed in Annex A, the ecological assessments are consistent with policy and guidance by assessing the worst-case scenario. Mitigation and compensation are proposed where impacts cannot be guaranteed to be avoided. However, the detailed design process will allow fine tuning to retain features, where reasonably practicable.</p> <p>In response to paragraphs 7.1.10 and 7.2.3, the Applicant's position can be found at item 2.1.54 of Natural England's SoCG [APP-099]. This confirms that in response to Natural England's request, the Applicant has now agreed to double the PFA provision from 10% to 20% of the low-nutrient free-drainage grassland provision within the Open Mosaic Habitat (OMH) creation. This will be presented in the updated version of the Design Principles, to be submitted at a later deadline.</p> <p>In response to paragraph 7.2.5, the Applicant's position can be found at item 2.1.50 of Natural England's SoCG [APP-099].</p> <p>In response to paragraphs 7.2.6 – 7.2.8, 7.2.15 and 7.2.16, the Applicant acknowledges the importance of PFA as a low-nutrient substrate, and in response to a request from Natural England, has committed to double the PFA provision from 10% to 20% of the low-nutrient, free-drainage grassland provision within the OMH creation, as detailed in item 2.1.54 of Natural England's SoCG [APP-099].</p> <p>In response to paragraphs 7.2.13 and 7.2.14, the Applicant's position can be found at item 2.1.49 of Natural England's SoCG [APP-099].</p> <p>In response to paragraphs 7.2.12, 7.2.18 - 7.2.27, the Applicant will consider Natural England's requested changes and will provide a response at a future deadline. The Applicant has proposed to Natural England the creation of a heat map to highlight high priority areas for invertebrates, which would be available to the Contractor to inform detailed design. This can be found at item 2.1.103 of Natural England's SoCG [APP-099]. Works toward the production of this map were begun during a meeting with Natural England on 12 July 2023.</p> <p>Breeding bird assemblages</p> <p>Paragraph 7.3.4 relates to Natural England's confidential annex and therefore is not covered in this response.</p> <p>In response to paragraphs 7.3.5 – 7.3.7, the Applicant's position can be found at item 2.1.67 and Annex C.15 of Natural England's SoCG [APP-099].</p>

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		<p>Saline Lagoon Fauna</p> <p>In response to paragraphs 7.1.11, 7.4.7 and 7.4.8, the Applicant will review the request for further information detailed in 7.4.7 and is happy to work with Natural England on this matter.</p> <p>Vascular Plants</p> <p>In response to paragraphs 7.5.1 and 7.5.2, the Applicant's position can be found at item 2.1.56 of Natural England's SoCG [APP-099].</p> <p>In response to paragraphs 7.5.3- 7.5.12, the Applicant's view is that Natural England's suggestions are a matter for detailed design, as described in Annex A.</p> <p>In response to paragraphs 7.5.13, the Applicant will consider Natural England's requested changes to the oLEMP and CoCP and will provide a response at a future deadline.</p> <p>8. Habitats of conservation importance</p> <p>Ancient Woodland</p> <p>In response to paragraphs 8.1.1 - 8.1.3 the Applicant's position can be found at items 2.1.7 and 2.1.8 of Natural England's SoCG [APP-099].</p> <p>In response to paragraph 8.1.4, the Applicant's position can be found at items 2.1.20 and 2.1.102 of Natural England's SoCG [APP-099].</p> <p>In response to paragraph 8.1.5, the Applicant's position can be found at item 2.1.64 of Natural England's SoCG [APP-099].</p> <p>Acid Grassland</p> <p>In response to paragraph 8.2.2, this error is corrected in the Environmental Statement Addendum [REP1-181]. The Project would result in the irreversible loss of 1.14ha of unimproved and semi-improved acid grassland located within Low Street Pit LWS and Blackshots Nature Reserve LWS, and which is of county importance. To compensate for this loss, 5.03ha of acid grassland habitat would be created within close proximity to the existing grassland. The level of</p>

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		<p>impact on acid grassland as a result of the Project would be permanent minor adverse, resulting in a slight adverse effect which is considered not significant.</p> <p>In response to paragraph 8.2.3, the Applicant's position can be found at item 2.1.44 and Annex C.10 of Natural England's SoCG [APP-099].</p> <p>In response to paragraphs 8.2.4 – 8.2.18, the Applicant's view is that Natural England's suggestions around measures to address soil nutrient loading and management proposals are a matter for detailed design, as described in Annex A, with the overarching objectives for acid grassland creation secured within the oLEMP [REP1-173], Section 8.27. The revised location for acid grassland creation, detailed in Annex C.10 of Natural England's SoCG [APP-099], was chosen in part to allow for potential expansion in extent, originally through natural regeneration, but this could be considered as part of the initial habitat creation works. Again, this could be addressed through detailed design.</p> <p>The current locations of the three areas of acid grassland affected by the Project offer poor connectivity between each other, but the Applicant recognises Natural England's suggestion to look to avoid isolated pockets of habitat. The Project's landscape design north of the River Thames, reported in ES Figure 2.4: Environmental Masterplan Sections [APP-163; APP-164; APP-165; APP-166; APP-167; APP-168], shows areas of open mosaic habitat located along the route of the A122 Lower Thames Crossing, and linked by other semi-natural planting. The open mosaic areas require the provision of sands and gravels as inert substrates on which grassland swards tolerant of low-nutrient conditions would develop (see Design Principles [APP-516], clause LSP.22). This approach aligns with the suggestion from Natural England to use substrates with acidic properties, such as sands and gravels, to help create seams of acid grassland habitats.</p> <p>9. Protected Species</p> <p>In response to paragraph 9.2.1, the Applicant's position can be found at item 2.1.71 of Natural England's SoCG [APP-099].</p> <p>In response to paragraphs 9.3.1 and 9.3.2, the Applicant's position can be found at item 2.1.72 of Natural England's SoCG [APP-099].</p> <p>In response to paragraph 9.4.1, the Applicant's position can be found at item 2.1.74 of Natural England's SoCG [APP-099].</p>

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		<p>In response to paragraphs 9.5.1 and 9.5.2, the Applicant's position can be found at item 2.1.75 of Natural England's SoCG [APP-099].</p> <p>In response to paragraph 9.6.1, the Applicant's position can be found at item 2.1.70 of Natural England's SoCG [APP-099].</p> <p>10. Biodiversity Net Gain</p> <p>In response to paragraphs 10.1.1 – 10.1.4, the Applicant's position can be found at items 2.1.22 and 2.1.23 of Natural England's SoCG [APP-099].</p> <p>In response to paragraphs 10.1.3 – 10.1.5, with reference to the Project's biodiversity metric figures, reported in Environmental Statement Appendix 8.21: Biodiversity Metric Calculations [APP-417], the Project is applying the Natural England Biodiversity Metric several years ahead of this being a mandatory requirement. For Nationally Significant Infrastructure Projects, mandatory BNG is likely to commence in November 2025, and (subject to further announcements from government) is expected to apply to applications accepted for examination after that date, which would not engage the A122 Lower Thames Crossing.</p> <p>In its design, the Project has focused on maximising biodiversity value through being ambitious in terms of the habitats proposed for essential mitigation requirements, shown in ES Figure 2.4: Environmental Masterplan Sections [APP-159; APP-160; APP-161; APP-162; APP-163; APP-164; APP-165; APP-166; APP-167; APP-168], and their long-term management described in the oLEMP [REP1-173], with a focus on the Lawton principles of more, bigger, better and joined up.</p> <p>It is recognised that the ambition demonstrated in the design does not necessarily maximise the value calculated by the Biodiversity Metric. This is particularly the case where proposing the creation of high distinctiveness habitats, which whilst aiming for the best ecological outcomes, don't necessarily provide the best performance in terms of the Metric. However, it is the view of the Applicant that the Project delivers a design of high biodiversity value.</p> <p>It is expected that the forecast Metric performance would improve during detailed design. Design refinements would seek to: further reduce habitat loss during construction, and in doing so reduce trading issues associated with woodland; minimise time lags between habitat loss and creation; and maximise the condition and distinctiveness of habitats created. In doing this the Project would seek to maximise biodiversity performance over the full Project lifecycle.</p> <p>In response to paragraph 10.1.6, The trading rules referred to concern the general Biodiversity Metric 3.1 rule (Rule 3) that habitat losses should be compensated for by creating habitats on a broadly like-for-like, or like-for-better basis. The Biodiversity Metric figures for the Project are reported in ES Appendix 8.21: Biodiversity Metric Calculations</p>

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		<p>[APP-417]. The trading rule is reported as not being met in Metric 3.1 for woodland due to the loss of high distinctiveness habitat lowland mixed deciduous woodland (excluding ancient woodland loss). This is shown as offset in the Metric by medium distinctiveness woodland, proposed as a precautionary approach to achieving target habitat type at this stage of the Project. Whilst there is a net increase in woodland extent in the BNG assessment of 70ha post-development (this figure excludes all woodland planting proposed for ancient woodland compensation and nitrogen deposition planting – see below), the classification of the woodland to be created as medium distinctiveness, and the low biodiversity units scores generated by woodland creation in the Metric, result in a trading failure. It should be noted that not all habitat loss and creation activities are included in the BNG calculations and the forecast BNG performance should be considered in the context of these exclusions.</p> <p>The loss of ancient woodland habitat and the corresponding ancient woodland compensation planting is excluded from the metric calculation (in accordance with the Metric guidance). In this assessment, the baseline value of the land proposed for ancient woodland compensation planting has been included in the metric calculation (thereby raising the baseline unit value). There is no published guidance around this approach, so it has been adopted on a precautionary basis.</p> <p>Nitrogen deposition compensation planting is also excluded from the assessment due to specific issues including irreplaceable habitat compensation and additionality (see Section 3.3 of ES Appendix 8.21: Biodiversity Metric Calculations [APP-417] for further details).</p> <p>In response to paragraph 10.1.7, re-surveying the entire Order Limits using UK Habitats Classification and in conjunction with a Biodiversity Metric Condition Assessment would be a significant undertaking given the size of the Order Limits and the detail that is required to collect this information for both area-based and linear features. Given the precautionary approach the assessment takes to habitat condition, it is expected that further survey would result in a lowering of the Project baseline biodiversity unit value and, as such, an improvement in the forecast metric net gain score. Any resurvey is unlikely to influence the Project design which is already considered to maximise biodiversity outcomes within the Order Limits. As a result, and given the pre-mandatory status of BNG for NSIPs, the proposed re-survey of the entire Order Limits is not considered proportionate.</p> <p>In response to paragraphs 10.1.8 – 10.1.10, the current BNG assessment for the Project has been run using the Natural England Metric 3.1 tool and associated guidance. Since the DCO application was submitted, a newer 4.0 version of the Metric has been released by Natural England (March 2023). Natural England advises users of previous versions of the Biodiversity Metric should, <i>'continue to use that metric (unless requested to do otherwise by their client or consenting body) for the duration of the project it is being used for. This is because users may find that certain biodiversity unit values generated in biodiversity metric 4.0 will differ from those generated by earlier versions'</i> (see The Biodiversity Metric 4.0 JP039 home page). In addition, Defra have advised that, <i>'Projects in an advanced</i></p>

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		<p><i>stage of the consenting process are not required to update their calculations with the latest major update of the metric' (taken from the Consultation on the Biodiversity Metric, Government response and summary of responses, March 2023). For this reason, the Applicant does not at this stage intend to switch to Metric 4.0.</i></p> <p>It should also be noted that, the majority of changes in Metric 4.0 are focused on providing an enhanced user experience and are unlikely to have significant impact on the range of outputs generated. Metric 4.0, as compared to Metric 3.1, only includes one significant change in the metric formula which relates to the spatial risk multiplier. As this relates to the calculation of biodiversity units off-site, the change will not impact the Project assessment in which there are no off-site units claimed.</p> <p>It is the way that data is applied in Metric 4.0, and not so much any changes in the Metric formula, that would require time to implement and which would make the outcomes of using Metric 4.0 different and unique to the assessment in Metric 3.1. It should also be noted that as some of the habitat types and condition assessments have changed between Metric 3.1 and 4.0 the data may not be available, in the absence of comprehensive new surveys, to apply as required in the latest version of the Metric and this includes data on all rural trees including the condition assessment for these features.</p> <p>In response to paragraphs 10.1.11 – 10.1.12, the assessment does, as stated, include assessment of units generated in protected species mitigation/compensation areas. At the time of writing ES Appendix 8.21: Biodiversity Metric Calculations [APP-417], it was not clear what the Government's position was in terms of including protected species mitigation and additionality i.e. what contribution was/was not appropriate. Therefore, the specific contribution these areas make to the BNG assessment was not detailed. However, the February 2023 consultation response on the BNG regulations and implementation subsequently clarified this. As per the 2023 Defra consultation response, '<i>mitigation and compensation for protected species and protected sites can be counted within a development's BNG calculation</i>', and it is clarified that this can be up to the point of no net loss in biodiversity. For the Project, the contribution of protected species mitigation and compensation sites comprises only 20% of the post-intervention units generated i.e. of the total reported in Appendix 8.21: Biodiversity Metric Calculations [APP-417]. As only 20% (1,629 area-based units from a total of 8,290) of all the post-intervention units are generated through these essential mitigation areas, it is considered that the Project aligns with the current approach for protected species mitigation/compensation additionality i.e. to meet additionality rules up to 7,712 units could be generated by habitats created/enhanced for protected species mitigation.</p> <p>In response to paragraphs 10.1.13 – 10.1.14, where habitats are temporarily lost and re-instated in the assessment, these lie within the temporary land take of the scheme and would be handed back to landowners following the completion of the works. For this reason, the Applicant would have no control over their future management and it is not possible to have certainty that these areas would be managed and maintained in such a way so as to provide an</p>

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		<p>enhancement. Hence the assumption in the assessment that they will be managed and maintained in the same way they are currently.</p> <p>11. King Charles III England Coast Path</p> <p>In response to paragraph 11.1.4, the Applicant's position can be found at item 2.1.101 of Natural England's SoCG [APP-099].</p> <p>In response to paragraph 11.1.5, the Applicant's position can be found at item 2.1.80 of Natural England's SoCG [APP-099].</p> <p>In response to paragraph 11.1.6, it should be noted that the Applicant is not proposing to realign the coastal path. However, a section of Two Forts Way will be improved where it runs through the southern area of Tilbury Fields, a new Country Park proposed by the Project. This section of Two Forts Way will have its surface improved and be widened in readiness for similar future improvements (by others) to the west and east. The design of Tilbury Fields, including these improvements, have been developed through consultation with Thurrock Council. Details on this proposal and all walkers, cyclists and horse riders (WCH) routes can be found within the Project Design Report Part E: Design for Walkers Cyclists and Horse riders [APP-512] and can be seen within the Rights of Way and Access Plans (Volume B), sheet 16 [REP1-025].</p> <p>In response to paragraph 11.1.7, this can be found in the Addendum to the Environmental Statement [REP1-181]. This confirms that for the duration of the temporary closure, an alternative route would be available for users, via the realigned England Coast Path.</p> <p>12. Landscape scale connectivity for people and wildlife</p> <p>In response to paragraphs 12.1.1 and 12.1.2, the Applicant's position can be found at items 2.1.34 and 2.1.35 of Natural England's SoCG [APP-099].</p> <p>In response to paragraph 12.1.3, as detailed in the Project Design Report Part C: Design Rationale [APP-509], there are a number of factors which determine the locations of green bridges along the Project route. This includes promoting the connectivity of sensitive landscapes, habitats for animals such as bats, badgers and dormice, as well as mitigating landscape severance and providing an improved experience for WCHs.</p> <p>In response to paragraph 12.1.6 and 12.1.7, the Applicant acknowledges Natural England's comment about full habitat connectivity between the green bridges at Thong Lane South and Brewers Road with existing habitats south of the A2/M2 and HS1. Although the Project design does not provide fully contiguous habitats south of these green</p>

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		<p>bridges, they do still provide an enhancement on the current situation where there is clear habitat severance between Shorne Wood to the north and Ashenbank Wood to the south. The provision of new bridges which provide green corridors providing animals with shelter, foraging and linear green features to follow, particularly for commuting bat species looking to cross the two existing major linear infrastructure features, provide a clear mitigation in the existing habitat fragmentation.</p> <p>In response to paragraph 12.1.8, the Applicant's position can be found at items 2.1.32 and 2.1.35 of Natural England's SoCG [APP-099].</p> <p>In response to paragraph 12.1.9, to provide separation from the widened A2 corridor for users of the realigned Thong Lane between Thong Lane green bridge south and Halfpence Lane roundabout, a native species hedge is proposed. The proposed hedgerow would be a continuation of proposed hedge planting on the green bridge and transitions to a linear belt of shrubs and trees on the new cutting for the widened A2. It is acknowledged that there is a gap in proposed planting of approximately 200m before proposed hedgerow planting resumes, approaching the Halfpence Lane roundabout junction. Proposed planting is shown on ES Figure 2.4: Environmental Masterplan Section 2 (2 of 10) [APP-160].</p> <p>13. <u>Management and Monitoring of mitigation and compensation measures</u></p> <p>In response to paragraphs 13.1.1 – 13.1.6 the Applicant's position can be found at item 2.1.21 of Natural England's SoCG [APP-099], which references the requirements of the LEMP and related monitoring and success criteria associated with each management area. Natural England would be a member of the group which advises on the scope of such criteria.</p> <p>14. <u>Securing Mechanisms</u></p> <p>In response to paragraphs 14.1.1 – 14.5, the Applicant will consider the proposed updated wording provided by Natural England, and will respond at a future deadline.</p>

REP1-269 Port of London Authority

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REP1-269	Port of London Authority	<p>WR: Summary: REP1-269 Full WR: REP1-270 Written submissions of oral comments made at ISH1 (21 and 23 June 2023) and ISH2 (22 June 2023): REP1-271</p> <p>Applicant's Response:</p> <p>Introduction (WR 1), The PLA (WR 2), Ports Policy (WR 3) The Applicant notes the Port of London Authority's (PLA) comments.</p> <p>Port Development (WR 4) & Tunnelling considerations (WR 5) In response to section 4 and 5, the Applicant has agreed and accommodated the future dredge levels within their River Restrictions Plan REP1-041 based on consultation with the PLA and their reasonable best estimate of potential future shipping draught. At detailed design the contractor is required to comply with the DCO which the River Restrictions is part of.</p> <p>The tunnel alignment to ensure the PLA has the future ability to dredge (WR 5.5) to -12.5m (plus 0.5m) chart datum is secured through the DCO in both the River Restrictions Plan REP1-041 and Paragraph 99 (1) of Schedule 14 clearly outlines the requirement to conform with the agreed dredged levels with any proposed alignment inside the available limits of deviation (LODs). The concerns by the PLA are therefore unfounded as the limits of deviation take effect subject to the agreed dredging depths. The Applicant notes that the Port of Tilbury London Limited's Written Representation suggests two alternatives to resolving this issue and the Applicant had already adopted one of these in the draft DCO submitted at Deadline 1. The PLA continues to request a modification to the Tunnels Limits of Deviation Plan. The Applicant does not consider this necessary given the limits of deviation take effect subject to the agreed depths, and the flexibility (which could be met without affecting those depths) is required. In particular, the Applicant notes that there may be changes to construction methodology or design which would enable the utilisation of the limits of deviation without affecting the agreed and legally binding tunnelling depths. This protection is further reinforced because under the PLA's protective provisions, approval will have to be provided in connection with specified works (which includes the tunnelling works).</p>

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		<p>The depth of the tunnel and limits of deviation (WR 5.6, 5.7, 5.8) are discussed in the Statement of Common Ground with the Port of London Authority (SoCG) [APP-100] at items 2.1.12 (Article 6 - Limits of Deviation (LOD) (DCO)), 2.1.31 (Compulsory Acquisition powers in favour of National Highways), 2.1.34 (Route alignment, tunnel depth and tunnel protection zones), and 2.1.40 (Scour Protection). The river restriction plans, and tunnel limits of deviation plans clearly set out the level of protection required for the tunnel.</p> <p>The tunnel limits of deviation are shown in [APP-046] and these represent the horizontal and upper vertical limits of the final constructed tunnel position. The upper vertical LOD provides flexibility to the contractor to develop the tunnel detailed design at a shallower depth than the current reference design to give long term environmental and safety benefits during operation of the tunnel whilst also ensuring the most viable asset is constructed.</p> <p>As stated at paragraph 99 of Schedule 14 (Protective Provisions) to the draft DCO [REP1-042], the constructed tunnel needs to 'provide for a protected dredged navigational channel depth of 12.5m below chart datum with an additional 0.5m to allow for over-dredging attributable to standard dredging methodology' and 'ensure that that channel depth can be maintained where scour protection is required.' This is a matter under discussion in the Port of London Authority's SoCG as detailed above and will be discussed further at a meeting with the Port of London Authority on 8 August 2023.</p> <p>Paragraph 99 of Schedule 14 (Protective Provisions) to the draft DCO [REP1-042], was agreed and added at deadline 1 to add surety over the use of the limits of deviation and river restrictions as combined requirements. The limits of deviation (WR 5.6) are restricted by the river restrictions plans agreed with the PLA. Any utilisation of them requires the Applicant's contractor to demonstrate that the agreed dredge level is not impacted.</p> <p>The Applicant has carried out a range of sensitivity checks utilising possible soil parameters and tunnel loads to satisfy itself that the LODs are not unreasonable and could be possible whilst satisfying the PLA's request for the potential to dredge down to 12.5m (+0.5m over dredge) in the future. At detailed design the contractor is required to comply with the DCO and Paragraph 99 (1) and (2) of Schedule 14 clearly outlines the requirement to conform with the agreed dredged levels with any proposed alignment inside the available LODs. The upwards limits allow for the tunnel to be built at a level where its long-term environmental impact is minimised, and operational safety increased. In the temporary case it would also reduce the level of hyperbaric working and the safety concerns that go with working under hyperbaric pressure. Any proposed design by the contractor would need to comply with all aspects of the DCO and demonstrate to the Applicant and the PLA that it can be constructed safely at the designed depth.</p> <p>The draft Order does not impose any restriction on the downward vertical LOD; however, the construction of a deeper tunnel has other important considerations, namely health and safety, and specifically hyperbaric working.</p>

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		<p>An updated note has been produced for distribution to the PLA to include the upper limits of deviation and provide evidence that the upper LOD could be utilised if favourable ground conditions can be proven at the detailed design stage.</p> <p>The specification of face pressures will be carried out as part of detailed design and construction planning by the contractor based on their design alignment, analysis of the ground conditions, chosen tunnel boring machine (TBM), methodology and associated slurry densities; slurry TBM or Variable density TBM.</p> <p>The contractors TBM proposal (WR 5.9) is part of the procurement process and not something that would be included within the DCO. The DCO application assesses the use of the most likely form of TBM, being a slurry TBM, with the allowances for the additional plant and process it would require, for example, slurry treatment plant, water treatment and water disposal. Other machines are available such as a variable density TBM that have the benefits of being able to increase the slurry density during tunnelling to reduce risk in low cover or fissured ground where slurry loss might be a concern or a EPBM which has the benefit of not using slurry and eliminates the risk of slurry loss, however, would have other disbenefits that make it a very unlikely choice for construction. The contractor is required through the various stages of procurement, design and construction to demonstrate their choices and mitigation measures to minimise risks in line with good tunnelling industry practice.</p> <p>Scour protection (WR 5.12) is discussed in the SoCG [APP-100] at item 2.1.40. The above measures also secure the PLA's ability to use scour protection if required. The Project design does not include the requirement for scour protection.</p> <p>In addition, the Applicant is in the process of updating its technical note for discussion with the PLA regarding their concerns on 8 August 2023. The tunnel along the DCO vertical alignment with the provision for future dredged level satisfies the stability calculations. The updated note will also discuss the effects of the upper LOD on tunnel stability and the ability to be assured that any utilisation of the LOD will maintain the PLA's ability to dredge to the agreed level. The tunnel does not require scour protection and no provision for scour protection in the river is secured in the draft DCO. Therefore, the detailed design solution cannot include scour protection in the river.</p> <p>Anchor Penetration (WR 5.13)</p> <p>As noted by the PLA the maximum anchorage depth of 4.9m is stated within the preliminary Navigational Risk Assessment (pNRA) [APP-548]. However, this is the largest ship penetrating into soft Clay, the pNRA also outlines the penetration depths or various ship sizes and also includes the depth cases for sands. The geological profile produced by the Project based on both historical British Geological Society data and Project boreholes in ES Appendix 10.5: Ground Model [APP-426] shows a maximum of 2.7m of Alluvium across the width that anchorages</p>

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		<p>may occur by large vessels. Below the Alluvium (soft Clay) the River Terrace deposits (RTD) (Sand and Gravel) are found varying from 0.1m across the current navigational channel to a maximum of 4.7m at the outer reaches. Below the RTD, Chalk is found which, across the current navigational channel, is only 1.3m below riverbed level. Using the above as information and the full table (Table 8.4) of predicted anchor penetration depths in the pNRA [APP-548] which states for Sand the maximum depth is 1.5m, the risk to the tunnel is small. Additionally, if the PLA utilised their agreed dredge level so that the exposed surface of the riverbed was Chalk, the anticipated penetration would be less.</p> <p>With regards to the PLA's concern over the use of Jack Up Barges (JUB), as part of the protection provisions and Tunnel Protection Zones, any future planned use of JUB within the protection zones would require the intended user to notify the Applicant. In doing so they'd be required to demonstrate that their planned methodology does not negatively impact the tunnel and the Applicant's assets prior to approval to carry out the work. This would also include any intention to carry out any ground investigation work around the Applicants assets.</p> <p>In response to the validity of the first protection zone (WR 5.14), the tunnel construction methodology will be in line with industry good practice, with excavation volumes and grout injection volumes actively monitored and managed during tunnelling.</p> <p>Unexploded Ordnance (WR 5.15, 5.16)</p> <p>During the planning stage an initial Unexploded Ordnance (UXO) Desk Study and Risk Assessment [APP-433] has been carried out by third party experts and included within the DCO. Additionally, as part of the in river ground investigation works a full geophysics survey was undertaken and a detailed river UXO risk assessment was carried out to safely position the JUB legs and borehole locations. As part of the planning design stage an UXO Detonation Impact Assessment was carried out to assess the impact of such explosion. At detailed design stage the contractor will be required to undertake an updated UXO risk assessment to match their detailed design proposals and methodology. If the Applicant discovers a UXO it is required to notify Emergency services, who will then make the appropriate arrangements with the relevant bomb disposal services. It is then in the hands of the bomb disposal services to assess the risk of the UXO and any mitigation procedures defined by the bomb disposal services and does not lie with the Applicant.</p> <p>UXO risk mitigation will be further developed at detailed design stage in line with industry best practice and legal requirements as detailed in ES Appendix 10.10: UXO Desk Study and Risk Assessment [APP-433]. This is secured in Section 6.11 of ES Appendix 2.2: Code of Construction Practice (CoCP) [REP1-157]</p> <p>General construction matters (WR 6)</p>

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		<p>General promotion, use of river (WR6.1)</p> <p>The Applicant recognises that the movement of its construction workforce will result in additional traffic on the highway network. The Applicant's construction traffic assessment as presented in Chapter 8 of the Transport Assessment [APP-529] includes construction staff as set out from paragraph 8.6.27. The Applicant considers that the assessment presented represents a reasonable worst case; as it includes a number of assumptions relating to the construction of the Project.</p> <p>The Applicant has also submitted the Framework Construction Travel Plan (FCTP) [APP-546] which sets out a framework with regard to the implementation of travel planning for the movement of personnel to and from the construction worksites and compounds (including Utility Logistic Hubs (ULH)) during the construction phase of the Project. The FCTP sets out that the Contractors will develop Site Specific Travel Plans which would contain targets to reduce the proportion of single occupancy trips and also increase the use of public transport. The Applicant has also committed to worker only shuttle buses which would provide the construction workforce with a means to access compounds and ULH from the transport hubs, proposed to be located (north of the Thames) at Grays, Upminster and Pitsea. The Applicant considers that the FCTP (and SSTPs), and the measures set out within the FCTP, including the shuttle buses, would reduce the amount of private car trips to and from compounds.</p> <p>The Applicant is not proposing that the construction workforce would be required to use particular routes to and from work; and this aligns with the assessment presented in the Transport Assessment.</p> <p>In relation to the movement of material, the Applicant has provided a river commitment with the necessary definitions from paragraphs 6.2.9 to 6.2.17 of ES Appendix 2.2 Annex B: outline Materials Handling Plan (oMHP) [APP-338]. The PLA mentions that greater use of the river could be made, however, the Project has already committed to 'utilise port facilities for at least 80% by weight of bulk aggregates imported to the north portal construction area'. The Project has also developed an earthwork strategy that enables 96% of beneficial material reuse on site. The Applicant acknowledges that a robust monitoring and reporting process regarding use of the river is required and is therefore preparing some additional information around commitments to be incorporated into the oMHP this will be communicated at a later deadline.</p> <p>Use of the river – materials (WR 6.2)</p> <p>The Applicant notes that the PLA are seeking an explanation or justification for why a greater proportion of bulk aggregates for the Scheme are not proposed for river based transport. The main reason for not expanding this commitment beyond the 35% referred to in the oMHP [APP-338] and as such to compounds further north or in the</p>

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		<p>south is due to their proximity to the river. Expanding the river use commitment, which may give the impression that it would reduce the number of vehicles that use the road network because the movements will be undertaken via the river. The conclusion then drawn would be that fewer vehicles would mean fewer adverse effects, providing a benefit from an environmental perspective. However, when assessing the Project as a whole, this is not the case due to the proximity of the river to compounds other than the northern tunnel entrance compound increasing the extent of reliance on the road network by those vehicles. In addition, an expanded river commitment may potentially result in larger volume of truck movements in more concentrated areas around the few suitable port facilities. This larger volume of truck movements is likely to increase the road traffic noise and deteriorate the air quality in those concentrated areas. The Project has therefore not committed to transporting a greater proportion of bulk aggregates via the river.</p> <p>Importing materials to the construction compounds south of the River Thames via existing ports is not favourable, due to the reliance of the local road network and no direct access to construction compounds. The construction of direct access between the river and construction compounds is constrained by the Thames Estuary and Marshes Ramsar, both being environmentally protected SSSI and constructing near them would result in unacceptable biodiversity impacts.</p> <p>Expanding the commitment to south of the river would cause a greater impact on the road network as it would mean materials would have to be transported through the LRN in Gravesham to be taken to compounds further away from the river. The northern tunnel entrance compound is the only compound which is in proximity to the river and has an adequate riparian facility adjacent to it (Port of Tilbury), allowing for a river commitment to be made. The southern tunnel entrance compound, approximately 1.5km from the river, would require large quantity of HGV movements on the LRN to connect it to the river. As mentioned above, the Ramsar site adjacent to the works prevents direct access from the river. In addition, several roads have had HGV bans placed on them within the DCO application to remove the risk of HGVs associated with the Project, see the outline Traffic Management Plan for Construction [REP1-174] for a full list of locations where HGV bans have been committed to.</p> <p>Additionally, the southern tunnel portal entrance compound would only see a small percentage, approximately 7%, of the overall required bulk aggregates imported for works at the tunnel contract, with a larger portion, approximately 93%, required at the northern tunnel entrance compound. A riparian facility capable of processing the materials required for the south does not exist within or close to the Project Order Limits. Constructing new or upgrading river infrastructure is therefore not considered value for money, which is a key consideration, because only a small proportion of the works would make use of this. Finally, the legacy benefits would be limited as any major project or nationally significant infrastructure project is unlikely to make use of a riparian facility which then heavily relies on the LRN in Gravesham.</p>

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		<p>The only materials of significant quantity excluded from the commitment to import 80% by weight of bulk aggregates to the north portal construction area are cement, steel and concrete and bituminous bound material batched off-site, as detailed in paragraph 6.2.12 of the oMHP [APP-338].</p> <p>Concrete and bituminous bound material batched off-site have been excluded due to quality concerns which may arise from delivery via the river which is not standard practice. That is, concrete and bituminous bound material delivered on a barge would impact the material properties, such as strength and durability, for its intended use. The other reason for the exclusion of off-site batched concrete has been to provide flexibility for innovations, for example, in DFMA.</p> <p>Steel has also been excluded since UK steel is manufactured in the north of England and south of Wales which lends to better connectivity via road or rail to local hubs in proximity of the site. The manufacturers and local suppliers have a well-established road and rail link with little infrastructure in place for connectivity via the river between them.</p> <p>The use of cement facilities noted by the PLA are not prohibited for use by the contractor and would be reviewed as part of the contractor's procurement strategy. The transportation of cement that forms part of river use commitment is a matter under review by the Applicant.</p> <p>Environmental Management Plan (WR 6.3)</p> <p>A commitment does exist to share the Contractors investigations in relation to why any material or facility is discounted from forming part of the plan to meet the commitment. Paragraph 3.1.1 of the oMHP [APP-338] states that '<i>no part of the authorised development is to start until an Environmental Management Plan (Second Iteration) has been submitted to and approved in writing by the Secretary of State (SoS), following consultation with the stakeholders identified in Table 2.1 of the CoCP.</i> Port of London Authority (PLA) are a named body within Table 2.1 of the CoCP [REP1-157]). Section 3.2 of the oMHP explains the requirements for Contractors to produce a Material Handling Plan (MHP) for the construction phase of each part of the works. Table 3.1 within this document lists out information which will be required in each MHP. Paragraph 6.2.14, specifically in relation to the commitment, requires the Contractor to explain 'how the Baseline Commitment and the Better than Baseline Commitment are addressed'. The mechanism to incorporate the views of stakeholders is via the consultation process of the construction phase MHP (EMP, Second Iteration) to which the PLA are a consultee. Therefore, it is through this consultation process that the PLA can review the material transport strategy of Contractor's and raise concerns or make relevant parties aware of opportunities that the Contractor could avail.</p> <p>The claim that '<i>...there would appear to be significant opportunities available during construction for the baseline commitment and better than baseline commitment not to be met</i>' is not based on evidence. To the contrary the</p>

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		<p>commitments and principles laid out in the oMHP ensure this is not the case. The Contractor at the north portal, where the river commitment applies, would provide a forecast of materials to be imported that would result in the commitment being met. This forecast would be based on the detailed design and a more detailed programme of works forming part of the MHP for the phase of works. The MHP, as mentioned above, would require consultation and approval, both external to the Project. The clauses for exemptions in meeting the commitment are standard and subject to consultation and approval, however, the Applicant acknowledges that a robust derogation process is required to manage any exemptions that may apply and is therefore preparing some additional information around a continuous resolution process to be incorporated into the oMHP for external release. Although, for context, the Project is of the view that such derogations are likely to be rare due to the nature of river use logistics and existing river logistics infrastructure, in addition there are several safeguarding elements that would be expected to be in place to minimise the need of any derogations. River use logistics lends to materials which are less dependent on ‘Just in Time’ deliveries and material that can be stockpiled, which is reflective within the commitment. It is good practice for Contractors to ensure sufficient reserve of material is stockpiled to mitigate against any supply chain and logistic issues. Such measures will reduce the likelihood of enforcing such derogations.</p> <p>The PLA’s understanding of paragraph 6.2.15 of the oMHP [APP-338] is correct, the SoS consent is only required where part b of this paragraph applies.</p> <p>The whole purpose of an exemption, if implemented, is that the commitment cannot be met and therefore the material in question cannot be moved in accordance with the commitment. The level of commitment would then, naturally, be reduced by the amount that formed part of the exemption. Monitoring and reporting of the commitment will ensure the level of commitment was being met whilst taking any exemptions into consideration.</p> <p>River use - monitoring and reporting (WR 6.4)</p> <p>The Applicant acknowledges that a robust monitoring and reporting process is required and is therefore preparing some additional information around commitments to be incorporated into the oMHP for external release. The requirement to meet ‘the Better than Baseline Commitment’ is not ‘a voluntary extra’. Paragraph 6.2.14 is an active duty on the Contractor to ‘explain in the EMP2 submitted for approval by the Secretary of State for that part of the Project how the Baseline Commitment and the Better than Baseline Commitment are addressed.’</p> <p>There is a requirement on the Contractor to engage with stakeholders. Paragraph 3.1.1 of the oMHP [APP-338] states that ‘no part of the authorised development is to start until an Environmental Management Plan (Second Iteration) has been submitted to and approved in writing by the Secretary of State, following consultation with the stakeholders identified in Table 2.1 of the CoCP’. Port of London Authority (PLA) are a named body within Table 2.1 of the CoCP. Section 3.2 of the oMHP explains the requirements for Contractors to produce a Material Handling Plan</p>

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		<p>(MHP) for the construction phase of each part of the works. Table 3.1 within this document lists out information which will be required in each MHP. The mechanism to incorporate the views of stakeholders is via the consultation process of the construction phase MHP (EMP, Second Iteration) to which the PLA are a consultee. Therefore, it is through this consultation process that the PLA can review the material transport strategy of Contractor's and raise concerns or make them aware of opportunities that the Contractor could avail. If the Contractor does not take on board suggestions with good reason and the SoS agrees with the stakeholder, then the MHP would have to be amended to receive approval.</p> <p>Use of river – Transportation (WR 6.6, 6.7)</p> <p>The Framework Construction Travel Plan (FCTP) [APP-546] sets out the framework with regard to the implementation of travel planning for the movement of personnel to and from the construction worksites and compounds (including Utility Logistic Hubs (ULH)) during the construction phase of the Project. The aim of this is to minimise adverse local impacts on the highway network from worker and visitor travel to the worksites and compounds. The FCTP requires that the works will not commence until a site-specific travel plan (SSTP) has been submitted and approved in writing by the Secretary of State following consultation with local planning authorities and local highway authorities (identified in Table 2.1 of the FCTP). The PLA are not a consultee to the SSTPs as they do not have a statutory remit on the use of the highway to which this document applies.</p> <p>It is anticipated due to the nature of the proposed work, shift times, locations of construction compounds (not necessarily the extent of the Order Limits) and travel arrangements for workers there would be limited cross-river trips by workers. The Applicant has three objectives for sustainable transport set out in paragraph 3.1.4 of the FCTP which the Contractors are required to adhere to – and would be managed through the framework of the SSTPs which will relate to the location of the works. Transport hubs are to be provided to be located either side of the River Thames which have an existing network of public transport services to enable the movement of staff to them, with onward travel to be provided by zero-emission worker only shuttle buses. The Applicant anticipates that the majority of workers will travel from these hubs to the compounds/ULH.</p> <p>Given the above, the Applicant has not proposed to provide transport hubs at the ferry piers due to the limited number of people undertaking the crossing. However, the PLA's attention is drawn to paragraph 6.4.3 of the FCTP which sets out that set down and pick up locations (including additional locations outside of the hubs, compounds and ULHs, e.g., the Tilbury passenger ferry terminal) are yet to be determined, as are routes, hours of operation and</p>

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		<p>frequency of the services. These matters would be determined by the Contractors and agreed with the relevant local highway authorities and public transport operators as appropriate.</p> <p>Air quality commitments (WR 6.8) The current DCO provisions do not utilise the use of the river through the DCO so is therefore not assessed in the Carbon and Energy Management Plan [APP-552].</p> <p>Draft DCO The PLA made a number of comments on the draft DCO (including protective provisions). The Applicant has responded to these comments in the 'Applicant's Response to IP Comments made on the draft DCO at Deadline 1' [REP1-042].</p> <p>Draft Archaeological Mitigation Strategy and Outline Written Scheme of Investigation The Applicant does not consider the PLA's concerns in relation to the draft Archaeological Mitigation Strategy and Outline Written Scheme of Investigation to be justified nor particularised. The river has formed part of the cultural heritage assessment in Environmental Statement (ES) Chapter 6: Cultural Heritage (Version 2) [AS-044]. Paragraph 6.4.196 to 6.4.201 identifies the cultural heritage baseline, which comprises 159 heritage assets. Of these 12 relate to traditional maritime archaeology in the form of wreck sites, while the remainder are sherds of pottery collected over the years on the northern foreshore. Additionally some peat deposits on the foreshore have been identified as having archaeological potential. Paragraphs 6.6.118 to 6.6.124 of ES Chapter 6: Cultural Heritage [AS-044] assess that there will be no impact on any of these heritage assets from activities within the river. Works associated with the temporary or permanent outfall on the foreshore at Coalhouse Point have the potential to affect a non-designated Roman site (Asset 412) assessed in paragraph 6.6.134 of ES Chapter 6: Cultural Heritage [AS-044]. This is predicted as experiencing a slight adverse effect that is not significant, but mitigation is being discussed with Essex Place Services, and the site is identified in Appendix 6.9: Draft Archaeological Mitigation Strategy and Outline Written Scheme of Investigation [APP-367] at paragraph 6.3.23.</p> <p>Environmental Statement (WR 22) The PLA has raised a series of points and the Applicant will further assess and if required update at a later deadline.</p>

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		<p>The Applicant has assessed the effect of increased nitrogen deposition on designated habitats during the construction and operation of the Project and this is reported within Environmental Statement (ES) Appendix 8.14: Designated Sites Air Quality Assessment [APP-403] and the Habitats Regulations Assessment (HRA) Screening Report and Statement to Inform an Appropriate Assessment [APP-487]. It should be noted that there are no intertidal habitats within the area affected by changes in nitrogen deposition (i.e. within 200m of the affected road network) as the new road is within tunnel. It should also be noted that the HRA [APP-487] does not identify any compensation sites as, with the mitigation measures proposed, concludes no adverse effect on all of the European sites assessed. The proposed HRA mitigation sites are also not within the area affected by changes in nitrogen deposition.</p> <p>With reference to the Project's biodiversity metric figures, reported in ES Appendix 8.21: Biodiversity Metric Calculations [APP-417], the Project is applying the Natural England Biodiversity Metric several years ahead of this being a mandatory requirement. For Nationally Significant Infrastructure Projects, mandatory BNG is likely to commence November 2025, and (subject to further announcements from government) is expected to apply to applications accepted for examination after that date, which would not engage the A122 Lower Thames Crossing.</p> <p>In its design, the Project has focused on maximising biodiversity value through being ambitious in terms of the habitats proposed for essential mitigation requirements, shown in ES Figure 2.4: Environmental Masterplan Sections [APP-159; APP-160; APP-161; APP-162; APP-163; APP-164; APP-165; APP-166; APP-167; APP-168], and their long-term management described in the outline Landscape and Ecology Management Plan [REP1-173], with a focus on the Lawton principles of more, bigger, better and joined up. It is recognised that the ambition demonstrated in the design does not necessarily maximise the value calculated by the Biodiversity Metric, but it is the view of the Applicant that the Project delivers a design of high biodiversity value. It is expected that the forecast Metric performance would improve during detailed design. Design refinements would seek to further reduce habitat loss during construction, minimise lags between habitat loss and creation and to maximise the condition and distinctiveness of habitats created, and the Project would seek to maximise biodiversity performance over the full Project lifecycle.</p> <p>With regard to the limitations of the HRA, the Habitats Regulations Assessment Screening Report and Statement to Inform an Appropriate Assessment [APP-487] assesses the effect of the Project on European sites and the associated functionally linked land. The HRA [APP-487] includes assessment of the potential for effects from changes in underwater noise, see paragraphs 6.2.24 to 6.2.28 and 6.2.89 to 6.2.93, concluding that likely significant effects on the Thames Estuary and Marshes SPA and Ramsar site can be ruled out for this effect pathway. The assessment of the effects on European sites has been completed with due consideration to the precautionary principle as described within paragraphs 2.5.11 to 2.5.14 in the HRA [APP-487]. The effects of visual disturbance, during the Project's construction, on qualifying features using the intertidal areas has been assessed in the HRA</p>

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		<p>[APP-487] paragraphs 6.2.29 to 6.2.33 and 6.2.94 to 6.2.106, and mitigation measures proposed to avoid and reduce the effects are described in the HRA [APP-487] paragraphs 7.1.12 to 7.1.37, with the assessment concluding no adverse effects on the integrity of the Thames Estuary and Marshes SPA and Ramsar site. The habitat enhancement proposed to reduce the effects of land take and disturbance is described within the HRA [APP-487] paragraphs 7.1.23 and it should be noted (as described in paragraph 7.1.26) that the Applicant has committed to providing the enhancement measures prior to the commencement of works. The relevant proposals for monitoring are described within the HRA [APP-487] in section 7.3 and it should be noted that given there are no effects identified for underwater noise, no mitigation measures such as bubble curtains are required.</p> <p>Piling works associated with construction of the northern tunnel entrance compound drainage pipeline and outfall, and the water inlet with self-regulating valve would be undertaken during periods of low water, avoiding/reducing the potential for transmission of underwater noise. Adherence of REAC commitment MB002 [REP1-157] would further limit the potential for any underwater noise effects. All piling methods will be discussed with and approved by MMO prior to undertaking any works as secured via the draft Deemed Marine Licence under Schedule 15, Part 2 of the draft Development Consent Order [REP1-042].</p> <p>Regarding the age of baseline data, the assessment of likely significant effects of the Project is supported by both ecological desk study and field data which has been gathered over a number of years. This was a result of the significant areas of land requiring survey, land access limitations, to address changes in Project design which affected the extent of its Order Limits, as well as in response to specific requests for additional data from stakeholders such as Natural England. This baseline data was used to inform the development of the preliminary design of the Project and enable the application of the mitigation hierarchy to avoid, mitigate, then compensate potential significant effects predicted to occur. The ecological impact assessment reported in Environmental Statement (ES) Chapter 8: Terrestrial Biodiversity [APP-146], and ES Chapter 9: Marine Biodiversity [APP-147], and the HRA [APP-487] follow the precautionary principle fundamental to all such assessments. This approach also informs the mitigation and compensation measures proposed, to ensure they are appropriate and proportionate to the potential effects of the Project and allow a degree of flexibility to accommodate any changes recorded between preliminary and detailed design, and during construction.</p> <p>The Chartered Institute for Ecology and Environmental Management (CIEEM) has published advice on the lifespan of survey data¹. This document is designed to cover all types and scales of development and notes that '<i>For some projects the time taken between commencing the scoping or design and submitting a planning application can be several years, and this can result in the early ecology surveys becoming out-of-date (based on the advice set out</i></p>

¹ Chartered Institute of Ecology and Environmental Management, 2019. Advice note on the lifespan of ecological reports and surveys.

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		<p><i>below [within the advice note]); this can lead to additional costs for developers associated with updating survey data. Nevertheless, there are considerable advantages associated with undertaking surveys early during the scoping or design phases of a project. Ecological consultants should give careful consideration to which, if any, surveys need to be updated; design their data collection in a way which maximises the benefits of early surveys whilst minimising the costs to developers; and provide clarity on the likely lifespan of surveys in their reports.'</i></p> <p>The Applicant recognises the need for up to date data to inform the detailed design and any specific licensing requirements so, in line with the CIEEM advice given above, includes a requirement for pre-construction surveys within the draft Development Consent Order [REP1-042].</p> <p>With respect to archaeology the river has formed part of the cultural heritage assessment in ES Chapter 6: Cultural Heritage [AS-044]. Paragraphs 6.4.196 to 6.4.201 identify the cultural heritage baseline, which comprises 159 heritage assets. Of these 12 relate to traditional maritime archaeology in the form of wreck sites, while the remainder are sherds of pottery collected over the years on the northern foreshore. Additionally some peat deposits on the foreshore have been identified as having archaeological potential. Paragraphs 6.6.118 to 6.6.124 of ES Chapter 6: Cultural Heritage [AS-044] assess that there will be no impact on any of these heritage assets from activities within the river. Works associated with the temporary or permanent outfall on the foreshore at Coalhouse Point have the potential to affect a non-designated Roman site (Asset 412) assessed in paragraph 6.6.134 of Chapter 6: Cultural Heritage [AS-044]. This is predicted as experiencing a slight adverse effect that is not significant, but mitigation is being discussed with Essex Place Services, and the site is identified in ES Appendix 6.9: Draft Archaeological Mitigation Strategy and Outline Written Scheme of Investigation [APP-367] at paragraph 6.3.23.</p> <p>Concluding remarks (WR 23) The Applicant notes the PLA's comments.</p>

REP1-378 Kent Downs AONB Unit

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REP1-378 REP1-379 REP1-380	Kent Downs AONB Unit	<p>WR: Summary WR: REP1-380 Full WR: REP1-378 including Appendix 1 REP1-379</p> <p>Applicant's Response:</p> <p><u>Consideration of Project against relevant AONB policy (paragraphs 3.20 to 3.49)</u></p> <p>In response to paragraph 3.20, the Applicant's position can be found at item 2.1.37 of the AONB Unit's SoCG, which is a matter under discussion [REP1-063]. The Applicant is engaged in constructive ongoing discussions regarding appropriate compensation for the harm to the Kent Downs AONB. For clarity, paragraph F.3.5 of the Planning Statement Appendix F: Kent Downs Area of Outstanding Natural Beauty [APP-501] simply identifies mitigation and compensation measures that are in the Kent Downs AONB; it does not state that the measures compensate for the harm to the AONB arising from the Project.</p> <p>In response to paragraph 3.21, the Applicant's position can be found at item 2.1.2 of the AONB Unit's SoCG, which is a matter not agreed [REP1-063]. All decisions about the Project, such as whether it should proceed, the selection of a preferred route and design considerations, have taken account of a wide range of economic, social and environmental impacts, and have been assessed appropriately, in accordance with the requirements of the National Policy Statement for National Networks (NPSNN). It is the Applicant's view that the NPSNN test has been met, and that the benefits of the Project clearly outweigh the impact on the Kent Downs AONB.</p> <p>In response to paragraph 3.22, the Applicant's position can be found at item 2.1.3 of the AONB Unit's SoCG, which is a matter not agreed [REP1-063]. A robust and appropriate assessment of the route selection has been undertaken and is detailed in ES Chapter 3: Assessment of Reasonable Alternatives [APP-141]. A non-statutory public consultation was held in 2016 which included a detailed appraisal of the routes. Route 3 was progressed as it best met the Scheme Objectives and had the least environmental impact. A further assessment was undertaken in 2020 which assessed the balance of the environmental impacts of the Eastern Southern Link against the Western Southern link, including an assessment of Landscape Character Areas and impacts to the AONB. The impacts of the Western Southern Link remain less significant than the overall balance of impacts of the Eastern Southern Link. Full details of the route selection process can be found in ES Chapter 3: Assessment of Reasonable Alternatives [APP-</p>

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		<p>141]. Impacts to the Kent Downs AONB are assessed within the Planning Statement [APP-495]. It is the Applicant's view that the NPSNN test has been met, and that the benefits of the Project clearly outweigh the impact on the Kent Downs AONB.</p> <p>In response to paragraph 3.23, alternative proposals for these works have been communicated during the development of the Project design during technical engagement (for example the utilities workshops held on 3 December 2019 and 6 February 2020) and the non-statutory consultations prior to the application submission. As per plate 2.11 of the ES Chapter 2: Project Description [APP-140] those proposals have been reviewed as part of an iterative design process and the needs and impacts considered. This process has resulted in amendments such as Work No G1a being located within Brewers Road and Park Pale instead of within the woodland east of Brewers Road. At the detailed design stage, further consideration will be given to the designed alignment and the construction impacts in accordance with the Register of Environmental Actions and Commitments (REAC) (Table 7.1 of the Code of Construction Practice [REP1-157]) REAC Item LV001.</p> <p>The AONB Unit's view that the impacts to the AONB via another pipeline routing would be 'significantly less damaging' is not supported by the Applicant. The alternative pipeline route would have required additional pipelines to be installed, of a greater bore than currently proposed to provide gas to the customers of the network. It would have increased the area of interface between the Works and the Kent Downs AONB with the additional need for further Utility Logistics Hubs during the construction of the pipeline.</p> <p>It is of note that this alternative proposal would not be acceptable to the gas network owner and operator due to operation and maintenance considerations, including additional costs associated with the upkeep of that network. The alternative route would also omit or significantly impede the opportunities to install infrastructure at the same time as constructing the Project that would enable the gas network operator to consider providing mains gas to Thong Village, Cobham and the businesses along the A2.</p> <p>In response to paragraph 3.24, the methodology for the landscape and visual impact assessment is set out in Section 7.3 of ES Chapter 7: Landscape and Visual [APP-145] and ES Appendix 7.2: Landscape and Visual Assessment Methodology [APP-377]. The Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment, 2013) state under the heading of 'Professional judgement in LVIA' on page 21 that '<i>Professional judgement is a very important part of LVIA. While there is some scope for quantitative measurement...much of the assessment must rely on qualitative judgement, for example about what effect the introduction of a new development or land use change may have on visual amenity, or about the significance of change in the character of the landscape and whether it is positive or negative</i>'.</p>

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		<p>The Applicant's response to the detailed comments on the LVIA are reported in Section 5. In response to paragraph 3.25, the Planning Statement [APP-495] and Planning Statement Appendix F: Kent Downs Area of Outstanding Natural Beauty (AONB) [APP-501] have covered in detail permanent and visual effects on the AONB in paragraph F.5.45 and from paragraph 6.5.254 and this can be found at item 2.1.8 of the AONB Unit's SoCG [REP1-063]. The impacts of the Project on the AONB are also covered extensively in Tables 7.29, 7.30, 7.31, 7.32 and 7.35 of ES Chapter 7: Landscape and Visual [APP-145]. The loss of the vegetation within the central reservation and some of the screening between the A2 and HS1 is assessed in ES Appendix 7.13: Views from the Road Assessment [APP-388].</p> <p>The required utilities diversion is detailed in Section 4.4 of the Project Design Report - Part D [APP-509].</p> <p>Table 5.1 of the Design Principles Report [APP-516] details, in clauses S1.01 and S1.22, that in the A2 corridor the reinstatement of woodland would be maximised, and that compensation planting shall ensure woodland is discreetly positioned within the dip of the distinctive valley landform.</p> <p>In response to paragraph 3.26, the existing infrastructure corridor within the AONB is described in Table 7.7 of ES Chapter 7: Landscape and Visual [APP-145]. Table 7.8 of ES Chapter 7: Landscape and Visual [APP-145] outlines that the Local Landscape Character Area is considered to be of poor landscape condition, as the intactness of the landscape is lessened by the A2 and HS1 corridors and associated fragmentation, and incoherent pattern of elements.</p> <p>In response to paragraph 3.27 an assessment of NPSNN paragraph 5.153 is undertaken in Appendix F of the Planning Statement from paragraph F.5.93 onwards [APP-501].</p> <p>In response to paragraphs 3.29 and 3.33, the Applicant's position can be found at item 2.1.17 of the AONB Unit's SoCG which is a matter not agreed [REP1-063]. The Applicant has proposed areas of planting both within and adjacent to the Kent Downs AONB with the aim of planting as close as possible to where the impact is and to reduce impacts to the setting of the Kent Downs AONB. There are additional constraints within the Kent Downs AONB, for example heritage considerations and conservation areas where the setting could be negatively impacted by woodland planting. Areas of replacement planting have therefore been designed within these constraints. The Applicant has consulted on the proposed removal of the Burham nitrogen deposition site from the Order Limits, and a 29ha reduction in the Blue Bell Hill site. The retained 43ha at Blue Bell Hill is the land which maximises the ecological connectivity, and therefore the Blue Bell Hill site would continue to provide a robust ecological connection to existing woodland and therefore its nitrogen deposition compensation function. The detailed design of the nitrogen deposition compensation sites will be developed through the outline Landscape and Ecology Management Plan (oLEMP), engaging the role of the Advisory Group, which the AONB Unit will be a member of. The Applicant also continues to discuss additional compensatory enhancements with the AONB Unit.</p>

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		<p>In response to paragraph 3.30 this matter can be found at item 2.1.8 of the AONB Unit's SoCG, as a matter agreed [REP1-063]. The Applicant acknowledges that the Project will result in the loss of vegetation within the central reservation, which is assessed in ES Appendix 7.13: Views from the Road Assessment [APP-388]. The minimum areas of retained vegetation are detailed in the Environmental Masterplan (ES Figure 2.4) [APP-159 to APP-168].</p> <p>In response to paragraph 3.31, discussions are ongoing, as detailed in item 2.1.22 of the AONB Unit's SoCG [REP1-063].</p> <p>The Applicant has followed the Landscape Institute's guidance for the design of the green bridges, which recommends the width of a mixed-use bridge be 15-20m, which both Thong Lane and Brewers Road green bridges exceed. The report also states '<i>To determine the width, the minimum width of the natural zone should be calculated, based on the project aims in terms of target species.</i>'. The Applicant has designed the width of Brewers Road and Thong Lane south green bridges to provide continuity of habitat for dormice and other small mammals and to help mitigate visual impacts through the provision of a wooded connection between the woodlands north and south of the A2 and to mark the gateway into the AONB.</p> <p>The Applicant does not consider that there is justification to deliver a green bridge at Park Pale because it is not needed to mitigate the impacts of the Project identified in the environmental assessment. Furthermore, there is extensive replacement tree and shrub planting and ancient woodland compensation planting proposed in the Park Pale area to help reduce the landscape and visual effects associated with the Project.</p> <p>In response to paragraph 3.32, the Applicant's position can be found at item 2.1.15 of the AONB Unit's SoCG [REP1-063]. A block of woodland planting is proposed on the embankment to the east of the M2/A2/A122 Lower Thames Crossing junction which would provide some screening, in conjunction with the false cutting along the A122 to A2 eastbound slip road, to help mitigate the visual impact of the junction on the AONB.</p> <p>In response to paragraphs 3.34 - 3.49 it is set out in items 2.1.26 and 2.1.32 of the AONB Unit's SoCG [REP1-063] that the Applicant is continuing to work collaboratively with the AONB Unit to consider their suggestions for additional compensatory enhancement measures, which are subject to ongoing discussion.</p> <p>ES Chapter 7: Landscape and Visual [APP-145] refers in paragraph 7.5.20 to the general enhancements included in the embedded mitigation and refers specifically to the Project-wide enhancement measure of detailed design principle Clause LSP.26 '<i>Opportunities shall be sought in the detail design of planting to screen or soften the visual appearance of any existing visual detractors featuring in views, for example, overhead power lines</i>' [APP-516].</p> <p>In response to paragraphs 3.34 and 3.35 the notification of proposed changes [AS-083] submitted to the Examining Authority 16 March 2023 sets out at Section 2.1 the proposed changes to the Project with the reduction in size of the Blue Bell Hill nitrogen deposition site and the removal of the Burnham nitrogen deposition site being deemed non-</p>

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		<p>material. The Change Application August 2023 [Document Reference 10.4] includes information on the reduction in size of the Blue Bell Hill nitrogen deposition site and the removal of the Burnham nitrogen deposition site and it will be for the Examining Authority to decide how to proceed. The timescales of this and any follow up actions are for the Examining Authority to determine.</p> <p>In response to paragraph 3.35 the Blue Bell Hill nitrogen deposition site is not being entirely removed from the DCO and therefore the site would still provide some landscape enhancement.</p> <p>In response to paragraph 3.36 it is acknowledged that the removal of Burnham nitrogen deposition site would not result in an enhancement to the AONB.</p> <p>In response to paragraph 3.37 almost half of the Fenn Wood nitrogen deposition site is within the AONB, and the entire site would have an enhancement beyond the existing baseline to the setting of the AONB.</p> <p>In response to paragraphs 3.38 and 3.39 the provision of compensation and supplementary planting within the AONB is an enhancement as outlined in ES Chapter 7: Landscape and Visual [APP-145].</p> <p>In response to paragraphs 3.40 to 3.41 the proposed earthworks will assist with enhancing the setting of the AONB by reducing the impact of the Project road and the existing A2/M2 corridor.</p> <p>In response to paragraph 3.42 the green bridge at Thong Lane is considered to provide both mitigation and enhancement. The Thong Lane green bridge mitigates for both increased severance of the AONB by supporting landscape integration but at the same time provides new green bridges where none previously existed, thereby enhancing user experience and improving the recreational access to the AONB.</p> <p>In response to paragraph 3.43, paragraph 5.153 of the NPSNN states '<i>where possible includes measures to enhance other aspects of the environment.</i>' Paragraph F.5.100 of Appendix F of the Planning Statement [APP-501] provides a list of enhancements to the Kent Downs AONB but does not state that they will mitigate the landscape and visual harm to the AONB.</p> <p>In response to paragraph 3.44, paragraph F7.7 of Appendix F of the Planning Statement [APP-501] refers to the AONB designation as a whole, which would not be compromised by the Project. The total extent of the Project's Order Limits covers 23.94km² with 1.61km² of the Order Limits being located within the Kent Downs AONB. This represents 0.18% of the total 878km² of the Kent Downs AONB and demonstrates that Project affects a small proportion of the overall AONB. The conclusions of ES Chapter 7: Landscape and Visual [APP-145] refer to localised impacts within the AONB and therefore do not contradict the conclusion of Appendix F of the Planning Statement [APP-501].</p> <p>In response to paragraph 3.45, paragraph F.5.100 of Appendix F of the Planning Statement [APP-501] provides a list of enhancements to the AONB. It is outlined in item 2.1.26 of the AONB Unit's SoCG [REP1-063]. The Applicant</p>

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		<p>is continuing to work collaboratively with the AONB Unit to consider their suggestions for additional compensatory enhancement measures, which are subject to ongoing discussion.</p> <p>In response to paragraph 3.46 these matters are covered in other responses. Alternative route options are covered from paragraph F.5.15 of Appendix F of the Planning Statement [APP-501]. Alternative utilities provision is covered from paragraph F.5.31 of Appendix F of the Planning Statement [APP-501].</p> <p>In response to paragraph 3.47, paragraph F.4.20 of Appendix F of the Planning Statement [APP-501] highlights that NPPF paragraphs 176 and 177 mirror the NPSNN policy and do not introduce new or different policy tests.</p> <p>In response to paragraph 3.48, paragraph F.4.32 of Appendix F of the Planning Statement [APP-501] demonstrates that principles of the Kent Downs AONB Management have been considered.</p> <p>Landscape Character and visual effects (paragraphs 4.8 – 4.9)</p> <p>In response to paragraph 4.8, the existing M2/A2 corridor comprises four lanes of traffic and a hard shoulder in both directions, together with associated structures, gantries, lighting columns and signage and the Applicant does not agree that there is an <i>'absence of the urbanising influences apparent to the west of the AONB boundary'</i>. Also, the Applicant does not agree that <i>'the widened A2 corridor and loss of vegetation/ woodland along the A2 would impact on the defining wooded ridged skyline'</i>. On completion of construction the wooded enclosure to the M2/A2 corridor would be retained as shown on ES Figure 2.4: Environmental Masterplan Sections 1 & 1A [APP-159] and Environmental Masterplan Section 2 [APP-160], despite the unavoidable removal of trees and woodland required to construct the Project and the associated utilities diversions. Retained mature woodland on both sides of the widened M2/A2 corridor (in Shorne Woods Country Park and Brewers Wood to the north and in Cobham Hall Registered Park and Garden and Ashenbank Wood, as well as young woodland in Jeskyns Community Woodland, to the south of HS1) would continue to provide effective visual enclosure of the widened M2/A2 corridor, thereby limiting most landscape and visual effects to the immediate road corridor and maintaining the characteristic wooded skyline in views from the surrounding landscape. It is acknowledged that there would be an intensification of existing highway infrastructure within the immediate road corridor.</p> <p>With regard to severance of the Kent Downs AONB by the M2/A2 corridor, the increased perception of separation between the northern and southern parts of the AONB would be most apparent during construction, largely due to vegetation clearance shown on ES Figure 7.24: Tree Removal and Retention Plan [REP1-151], in conjunction with construction activity. However, by the design year effects would be substantially reduced due to the establishment of replacement planting along the M2/A2 corridor and adjacent ancient woodland compensation planting. In addition, the perception of increased separation would only be apparent from a limited number of locations, close to the</p>

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		<p>existing M2/A2 corridor, where the existing M2/A2 corridor already gives rise to a perception of separation. The two proposed green bridges (Brewers Road green bridge and Thong Lane green bridge south) would also help reduce the effect of physical and visual separation, by creating new broad green links connecting the northern and southern parts of the Kent Downs AONB.</p> <p>From a cultural heritage perspective, the heritage assets north and south of the A2 have already been greatly severed by the modern road comprising eight lanes with hard shoulders and slip roads. This has already altered the previous character of the A2, which until the early 20th century had been a much smaller road of rural character, easily crossed (see Gravesham Borough Council Local Impact Report, Appendix 6, pages 63, 67, 68 [REP1-232]). Beginning in the 1920s, the A2 has seen several phases of expansion which have resulted in the large modern road infrastructure which currently exists. The operation of the Project would increase the road infrastructure, but this has not been assessed to increase the severance such that it causes significant effects or substantial harm to heritage assets in this area.</p> <p>The Applicant acknowledges that the high-value designated Cobham Hall Grade II* Registered Park and Garden (Cultural Heritage ref. RPG1) would be impacted by the presence of the widened A2 and realigned Thong Lane and Brewers Road bridges over the A2, which border the northern edge of the park. The reduction in vegetation along the northern edge of the park with the loss of trees from the central reservation of the A2 corridor and the increase in the size of the existing infrastructure corridor in this location would increase the visibility of modern infrastructure within and immediately adjacent to RPG1. Medium-value non-designated built heritage asset Shorne Woods Country Park (1311) located partially within the Order Limits would receive impacts from the operation of the expanded road infrastructure within its setting to the south and south-west. However, these impacts have been assessed as resulting in a permanent minor adverse magnitude and a slight adverse effect, which is assessed as not significant. This is detailed in paragraphs 6.6.270 – 6.6.272 and 6.6.283 of ES Chapter 6: Cultural Heritage [AS-044]. The Applicant also considers that the creation of the green bridges would create a green link between Cobham Hall Grade II* Registered Park and Garden, Shorne Woods and Thong Conservation Area with which the asset is historically associated.</p> <p>In response to paragraph 4.9, the Applicant's position can be found at item 2.1.14 of the AONB Unit's SoCG, which is a matter not agreed [REP1-063]. The access to the Harlex Haulage Depot is located as close to the A2 corridor as possible while maintaining a safe design and junction. The access has been designed with stakeholder feedback from the haulage operator to ensure the design facilitates their operations. The proposed woodland planting adjacent to the Harlex Haulage Depot is in line with that proposed in December 2020 and as detailed in the Environmental Masterplan (ES Figure 2.4) [APP-159 to APP-168].</p> <p>Biodiversity rich habitats (paragraphs 4.10 – 4.11)</p>

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		<p>In response to paragraphs 4.10 and 4.11, the Applicant's position can be found at item 2.1.27 of the AONB Unit's SoCG, which is a matter not agreed [REP1-063]. The Applicant recognises the level of protection given to SSSIs and ancient woodland in the NPSNN (paragraphs 5.28, 5.29, and 5.32) and believes the Project meets the NPSNN test.</p> <p>The Project has been designed to minimise adverse effects on these habitats. Where adverse effects are unavoidable, the Applicant's strategy to offset these is considered to be in line with the approach agreed with Natural England. Ancient woodland compensation planting has been proposed as part of the mitigation strategy and supports improved habitat connectivity within the wider landscape.</p> <p>The loss of ancient woodland shown on ES Figure 7.24: Tree Removal and Retention Plan [REP1-151] is a realistic worst case assumption. However, the intention is to reduce the actual loss of ancient woodland at the detailed design stage in accordance with ES Appendix 2.2: Code of Construction Practice, First Iteration of Environmental Management Plan [REP1-157] and LV001 of the Register of Environmental Actions and Commitments (REAC), which is a commitment to reduce the removal of trees and vegetation as far as reasonably practicable. In addition, LV013 of the REAC requires that <i>'where excavation for installation of utilities would require the removal of ancient woodland, trees subject to tree preservation orders or hedgerows subject to the Hedgerows Regulations 1997, trenchless installation methods will be used to avoid removal where reasonably practicable, unless this would give rise to new or materially different environmental effects'</i>.</p> <p>The Kent Downs AONB have been added to list of relevant stakeholders identified in Table 2.1 of the outline Landscape and Ecology Management Plan [REP1-173]. The LEMP will be further developed by the Contractor for approval by the Secretary of State (SoS) in consultation with those stakeholders identified in Table 2.1.</p> <p>Setting (paragraphs 4.12 – 4.17)</p> <p>In response to paragraphs 4.12 – 4.17, it is acknowledged that there would be a significant residual adverse impact in the design year on the character of the Higham Arable Farmland (sub area Thong) Local Landscape Character Area (LLCA), within which the proposed M2/A2/A122 Lower Thames Crossing junction is located, as shown on ES Figure 7.2: Local Landscape Character Areas [APP-198]. However, the Applicant does not agree that the extensive woodland proposed would be largely ineffective in mitigating the most elevated parts of the junction. This is because woodland is proposed on all the junction embankments, extending up to the height of slip roads and in some cases higher, for example, on the false cutting to the A122 southbound to A2 eastbound link road. It would not be practicable to completely screen the taller viaduct structures, however, by the design year the proposed woodland planting would soften their appearance when viewed from the surrounding landscape, in keeping with the adjoining wooded landscape character, thereby helping to integrate the structures into the landscape. As a result of the establishment of proposed woodland planting in conjunction with topography and retained existing woodland, there would be few locations from within the AONB where the new junction would be visible. Photomontage S-28 in ES</p>

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		<p>Figure 7.19: Photomontages - Winter Year 1 and Summer Year 15 (2 of 4) [REP1-130] illustrates the effectiveness of the proposed woodland planting in softening views of the proposed M2/A2/A122 Lower Thames Crossing junction from outside the AONB.</p> <p>The detailed lighting design will be developed to meet the relevant standards and guidance along with the lighting specific Design Principles [APP-516]. Clauses LST.02 and LST.03 have been introduced to reduce the impact of new lighting along the route and help preserve local nocturnal character.</p> <p>Although the Park Pale Lane Utility Hub is located on rising ground, it is located on the lower part of the slope, close to the existing M2/A2 corridor, thereby reducing its visual prominence and would be seen in the context of the existing Harlex Haulage Depot from footpath NS161. It would comprise a temporary feature in the view and land used for the Utility Logistic Hub (ULH) would be fully restored and landscaped on completion of construction. Relevant factors that have influenced the Park Pale Lane Utility Hub location are set out in Table 5.19 of the Planning Statement [APP-495]. It is the opinion of the Applicant that no alternative location for the ULH would have met the practical requirements whilst at the same time minimising the effects on the AONB.</p> <p>In response to Public Right of Way NS161, Table 13.64 of ES Chapter 13: Population and Human Health [APP-151] states a temporary diversion around the proposed utilities working area would be in place for the duration of works, which is anticipated to last for approximately six months.</p> <p>ES Appendix 2.2: Code of Construction Practice, First Iteration of Environmental Management Plan [REP1-157] sets out commitments to reduce the potential effects of the southern tunnel entrance compound and A2 compound on the Kent Downs AONB. Within the southern tunnel entrance compound, commitment LV009 of the Register of Environmental Actions and Commitments (REAC) requires <i>'Softening the appearance of temporary earthwork stockpiles adjacent to the Kent Downs AONB by phasing the works to be such that south-east facing slopes are retained as grass seeded slopes for visual screening purposes for as long as reasonably practicable'</i>. Within the A2 compound, commitment LV007 of the REAC requires that <i>'Construction compound facilities greater than 6m in height would be located as south-westerly as is reasonably practicable to maximise distance from nearby residential properties on Thong Lane and from the adjacent boundary of the Kent Downs AONB.'</i></p> <p>Tranquillity (paragraphs 4.19 – 4.27)</p> <p>In response to paragraph 4.19, a series of baseline landscape noise surveys have been undertaken at key locations where the defining characteristics include a perceived level of tranquillity, as detailed in ES Appendix 7.5 [APP-380].</p> <p>In response to paragraph 4.20, it is confirmed that ES Figure 7.21.3: Existing Tranquillity within Kent Downs AONB [APP-257] is only provided for general context.</p>

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		<p>It is noted that the Guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England (Natural England, March 2011) was prepared for a particular purpose; This publication <i>'sets out Natural England's general approach to designation and summarises the relevant governance and statutory procedures'</i>. Notwithstanding the purpose of the publication, the contributors and detractors to tranquillity defined by Natural England are acknowledged, although they do not affect the methodology or conclusions set out in Appendix 7.11: Traffic and Noise Effects on the Kent Downs Area of Outstanding Natural Beauty [REP1-162].</p> <p>In response to paragraph 4.22, cyclists and in particular horse riders are more likely to use quieter, minor roads for recreational enjoyment. These roads are less likely to be affected by increased traffic flows, as they do not generally comprise through-routes likely to be used by traffic displaced from another route because of the Project. Users of other larger roads are likely to be less susceptible to changes in traffic flows, since their perception of relative tranquillity is already compromised by the presence of the existing road and vehicular traffic.</p> <p>In response to paragraph 4.23, since the DCO application, the Applicant has made an amendment to the assessment of effects on the relative tranquillity of the wider AONB in ES Appendix 7.11: Traffic and Noise Effects on the Kent Downs Area of Outstanding Natural Beauty [REP1-162]. The amendment was made to reflect corrections to some predicted traffic flows shown on traffic maps in supporting figures ES Figure 7.20.1: Traffic effects on Kent Downs AONB during construction [REP1-132], [REP1-134], [REP1-136], [REP1-138], [REP1-140], [REP1-142] and ES Figure 7.20.2: Traffic effects on Kent Downs AONB during operational year 2030 and 2045 [REP1-145].</p> <p>In addition to the adverse effects noted in the Kent Downs AONB Unit Written Representation, the amended ES Appendix 7.11: Traffic and Noise Effects on the Kent Downs Area of Outstanding Natural Beauty [REP1-162] also identifies the potential for notable visual disturbance from increased traffic on the minor road route between Cobham and Cuxton, comprising Cobhambury Road, Warren Road and Bush Road during operation, 2030, in the PM peak and on the minor road route between the M20 and M2 motorways, comprising Boxley Road, The Street, Pilgrim's Way and Lidsing Road during operation in the PM peak.</p> <p>At the design year, 2045, the potential for notable visual disturbance has also been identified from increased traffic on the minor road route between Cobham and Cuxton, comprising Cobhambury Road, Warren Road and Bush Road during the PM peak and within Cobham.</p> <p>In response to paragraph 4.25, the Applicant's position can be found at Section 6.3 of the Combined Modelling and Appraisal Report [APP-518]. The future year trip matrices are produced by starting with the validated base year matrices and applying traffic growth factors by area within the model. These factors come from the DfT's National Trip End Model (NTEM). Further spatial information on the locations of this growth is provided by explicitly adding the trips associated with new developments into the future year matrices, with the overall total increase in the number of</p>

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		<p>trips matching the total increase in the wider area forecast by the NTEM. This is the method set out in DfT's Transport Appraisal Guidance (TAG).</p> <p>In response to paragraph 4.26 and as explained in the above response to paragraph 4.8, the overall wooded enclosure to the M2/A2 corridor would be retained, despite the unavoidable removal of trees and woodland required to construct the Project and the associated utilities diversions.</p> <p>Impacts on the wider AONB (paragraphs 4.29 – 4.31)</p> <p>In response to paragraph 4.29, the Applicant's position can be found at item 2.1.12 of the AONB Unit's SoCG [REP1-063] which is a matter under discussion. The Traffic Forecasts Non-Technical Summary presents the forecast percentage change in flow as a result of the Project, and an increase is predicted along the A229. Improvements to the A229 at the intersections with the M2 and M20 are not part of the Project and are therefore assessed in ES Chapter 16: Cumulative Effects Assessment [APP-154].</p> <p>Any future development of the A229, as proposed by Kent County Council, would be subject to the requirements of the National Planning Policy Framework which only allows for development in exceptional circumstances and where it can be demonstrated that it is in the public interest.</p> <p>The Applicant is currently in joint discussions with relevant authorities about the proposed improvement works at this location in accordance with its licence obligations to work with others to align national and local plans and investments, balance national and local needs and support better end-to-end journeys for road users.</p> <p>In response to paragraph 4.30, the Applicant recognises that, as a result of the Project opening, some people will choose to make different journeys. In many places on the network, and within Kent, this would lead to beneficial impacts on the network, and in some cases this would lead to adverse impacts. Overall, the benefits on the road network would outweigh the adverse impacts, and this is reflected in the positive economic benefit of the Project overall and within Kent. The Applicant has identified the adverse impacts on traffic flows across the strategic and local road networks, and each of these impacts has been assessed against the requirements set out in the National Policy Statement for National Networks (DfT, 2014) in Appendix F of the Transport Assessment [APP-535]. The Applicant does not believe that the adverse impacts are unacceptable under this policy.</p> <p>The Applicant is proposing to monitor the traffic impacts of the Project on the local and strategic road networks as set out in the Wider Network Impacts Management and Monitoring Plan (WNIMMP) [APP-545]. If the monitoring identifies issues or opportunities related to the road network as a result of traffic growth or new third-party developments, then local authorities would be able to use this as evidence to support scheme development and case making through existing funding mechanisms and processes.</p>

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		<p>M2 junction 4 is already listed as one of the monitoring locations in the WNIMMP, and relevant highway authorities will be able to propose additional monitoring locations through Requirement 14 in Schedule 2 of the draft DCO [REP1-042], which requires the preparation of an operational traffic monitoring plan, which must be approved by the Secretary of State following consultation with the relevant highways authorities.</p> <p>The Applicant continues to actively engage with stakeholders regarding the traffic impacts of the Project, and will continue to work with local authorities and others to align national and local plans and investments, balance national and local needs, and support better end-to-end journeys for road users (paragraph 5.19 of Highways England: Licence (DfT, 2015)).</p> <p>In response to paragraph 4.31, the Applicant's position can be found at item 2.1.32 of the AONB Unit's SoCG which is a matter not agreed [REP1-063].</p> <p>Comments on Chapter 7 of the Environmental Statement (LVIA) (paragraphs 5.1 – 5.21)</p> <p>In response to paragraphs 5.1-5.21, the AONB's view that the level of harm to the AONB is under assessed in some cases in the LVIA can be found at item 2.1.40 of the AONB Unit's SoCG [REP1-063], however, the Applicant does not agree with this position.</p> <p>The methodology for the landscape and visual impact assessment is set out in Section 7.3 of ES Chapter 7: Landscape and Visual [APP-145] and ES Appendix 7.2: Landscape and Visual Assessment Methodology [APP-377] and has been appropriately applied to assess the realistic worst case effects likely to arise from the Project on the landscape character and visual amenity of the Kent Downs AONB. These realistic worst-case effects are set out in ES Appendix 7.9: Schedule of Landscape Effects [APP-384] and ES Appendix 7.10: Schedule of Visual Effects [APP-385]. The landscape character and views from the Kent Downs AONB are already impacted by the existing M2/A2 corridor and this has been taken into consideration in the landscape and visual impact assessment.</p> <p>Landscape and visual effects at design year have been assessed with regard to the mitigation that would be provided by the proposed planting shown on ES Figure 2.4: Environmental Masterplan Sections 1 & 1A (1 of 10) [APP-159], Section 2 (2 of 10) [APP-160] and Section 3 (3 of 10) [APP-161], allowing for the effect of 15 years growth. The sensitivity of visual receptors within ES Appendix 7.13: Views from the Road Assessment [APP-388] has been based on Design Manual for Roads and Bridges LA 107 Landscape and visual effects, where users of main roads are identified as being of low sensitivity. The assessment of the magnitude of change in views reported in ES Appendix 7.13: Views from the Road Assessment [APP-388] takes into consideration the effect of existing highway infrastructure on the views of road users traveling along the M2/A2 corridor within the Kent Downs AONB.</p>

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		<p>In response to paragraph 5.1, the approach outlined in ES Chapter 7: Landscape and Visual [APP-145] is consistent with best practice guidance in the Guidelines for Landscape and Visual Impact Assessment, Third Edition (Landscape Institute and Institute of Environmental Management & Assessment, April 2013) which in relation to using existing character assessments, states at paragraph 5.15 that:</p> <p><i>‘Existing assessments may need to be reviewed and interpreted to adapt them for use in LVIA... 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.’</i></p> <p>From the Applicant’s review of the West Kent Downs (sub area Cobham) Local Landscape Character Area (LLCA) and from its site visits, it is of the view that HS1 and the associated planting strongly define the northern extent of the Cobham sub area and it therefore made sense for the Shorne sub area to incorporate the whole width of the A2 corridor, beyond HS1. However, notwithstanding the slight difference in the West Kent Downs (sub area Cobham) LLCA boundary shown on ES Figure 7.2: Local Landscape Character Areas [APP-198] compared with the Kent Downs AONB Landscape Character Assessment, the effects of the Project are fully assessed either as direct or indirect effects within the West Kent Downs (sub area Cobham) LLCA and/ or the neighbouring West Kent Downs (sub area Shorne) LLCA.</p> <p>The effects on both the West Kent Downs (sub area Cobham) LLCA and on the West Kent Downs (sub area Shorne) LLCA are assessed in Tables 2.3 and 3.3 of ES Appendix 7.9: Schedule of Landscape Effects [APP-384]. The findings of these two assessments are then brought together into a combined assessment for the overarching West Kent Downs Landscape Character Area (LCA) 1A identified in the Kent Downs AONB Landscape Character Assessment Update. The combined effects reported in the landscape impact summary Tables 7.33 and 7.34 in Section 7.9 of ES Chapter 7: Landscape and Visual [APP-145] and the overall conclusion of the landscape and visual impact assessment would therefore not differ if the Cobham and Shorne sub area boundary is drawn in a different location.</p> <p>In response to paragraph 5.3, the statements in paragraph 7.3.68 and paragraph 7.4.45 of ES Chapter 7: Landscape and Visual [APP-145] are correct. Paragraph 7.3.68 of Chapter 7 notes that <i>‘in order to assess visual effects relating to the nitrogen deposition compensation sites, a further 13 Representative Viewpoints have been added since agreement with stakeholders.’</i> Paragraph 7.4.45 of Chapter 7 makes the same point. Table 7.2 of Chapter 7 notes that photomontage locations were agreed with Kent Downs AONB Unit on a site walkover which took place on 19 June 2019, following extensive consultation.</p> <p>Representative Viewpoint S-16; The Project would only be perceptible in a small part of the view from this location, a rare, glimpsed outward view from Shorne Woods Country Park towards the Project, filtered by woodland and</p>

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		<p>preparation of a photomontage is not considered necessary to understand the visual impact of the Project from this location.</p> <p>Representative Viewpoint S-29 is located at one of few breaks in the roadside vegetation along Shorne Ifield Road affording a panoramic view north adjoining the northern edge of the AONB. The panoramic view over the Thames Estuary and beyond would be seen in the context of the existing golf course landscape and overhead lines in the mid ground and distant views of large-scale urban development at Tilbury. A photomontage is not considered necessary to understand the visual impact of the Project from this location.</p> <p>Grid reference 568529 169703 on the eastbound slip road from Brewers Road to the A2; It is not considered that provision of a photomontage from this location would add much to the visualisations already provided. For example, although looking westwards and from Park Pale bridge, the photomontage from Representative Viewpoint S-05a shows the effect of the widened M2/A2 corridor following removal of the existing woodland belt in the central reservation.</p> <p>In response to paragraph 5.4, the methodology for the landscape and visual impact assessment is set out in Section 7.3 of ES Chapter 7: Landscape and Visual [APP-145] and ES Appendix 7.2: Landscape and Visual Assessment Methodology [APP-377] and has been appropriately applied to assess the realistic worst case effects likely to arise from the Project described in the DCO application submitted in October 2022.</p> <p>There have been several Project design changes and further development of the Project definition since the DCO application made in October 2020 was withdrawn. The current ES Chapter 7: Landscape and Visual [APP-145] therefore reflects these design changes and a greater level of certainty around the likely effects of the Project following further design development, in particular, relating to proposed utilities diversions along the M2/A2 corridor. Furthermore, the definition of baseline landscape and visual conditions has also been critically reviewed and updated since October 2020. The ES Chapter 7: Landscape and Visual [APP-145] submitted with the current DCO application should therefore be read as a standalone assessment and not compared to the version that was withdrawn in late 2020.</p> <p>The version of ES Chapter 7: Landscape and Visual contained in the withdrawn DCO application is of no relevance to the current application. This is also relevant to paragraph 5.7.</p> <p>In response to paragraph 5.5, the methodology for the landscape and visual impact assessment is set out in Section 7.3 of ES Chapter 7: Landscape and Visual [APP-145] and ES Appendix 7.2: Landscape and Visual Assessment Methodology [APP-377].</p> <p>As explained in Table 1.3 of ES Appendix 7.9: Schedule of Landscape Effects [APP-384], the West Kent Downs (sub area Shorne) Local Landscape Character Area (LLCA) is considered to have <i>'limited capacity to accommodate the</i></p>

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		<p><i>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.</i> The susceptibility to change was therefore assessed as high, compared with that of the West Kent Downs (sub area Cobham) LLCA, which <i>'due to the presence of the existing A2 corridor and HS1 along the northern boundary of this LLCA... has some ability to accommodate the [largely indirect effects of the] Project without substantial loss of its overall integrity'</i> and the susceptibility to change was therefore assessed as medium.</p> <p>In response to paragraph 5.7, the methodology for the landscape and visual impact assessment is set out in Section 7.3 of ES Chapter 7: Landscape and Visual [APP-145] and ES Appendix 7.2: Landscape and Visual Assessment Methodology [APP-377].</p> <p>As explained in paragraph 4.3.2 of ES Appendix 7.2: Landscape and Visual Assessment Methodology [APP-377], the sensitivity of these visual receptors has been assessed as 'high', rather than 'very high' in ES Appendix 7.10: Schedule of Visual Effects [APP-385] due to the prominence of existing highway and/or rail infrastructure in the existing view, which reduces the sensitivity of visual receptors to the nature of the proposed change. This is consistent with the overarching best practice guidance in the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3) (Landscape Institute and Institute of Environmental Management & Assessment, April 2013), discusses susceptibility of visual receptors to change at paragraphs 6.32 to 6.35.</p> <p>Paragraph 6.32 of GLVIA3 notes that <i>'the visual amenity they [visual receptors] experience at particular locations'</i> should also be considered alongside <i>'the occupation or activity of people experiencing the view at particular locations and the extent to which their attention or interest may therefore be focussed on the views'</i>. Therefore, where the M2/A2 corridor reduces the quality of existing visual amenity, a slightly lower level of sensitivity was assessed for affected visual receptors.</p> <p>In response to paragraph 5.11, ES Appendix 7.9: Schedule of Landscape Effects [APP-384] states that by the design year, <i>'the establishment of new woodland planting would partially reinstate vegetation lost during construction and reduce the prominence of highway infrastructure'</i> within the West Kent Downs Landscape Character Area (LCA) 1A (incorporating the West Kent Downs (sub area Cobham) and West Kent Downs (sub area Shorne) Local Landscape Character Areas).</p> <p>The heights of established mitigation planting that have been assumed in the landscape and visual impact assessment at design year are stated in paragraph 7.3.92 of ES Chapter 7: Landscape and Visual [APP-145]. These heights are considered to be a reasonable reflection of likely growth rates over a 15 year period.</p> <p>The assessment in ES Appendix 7.9: Schedule of Landscape Effects [APP-384] goes on to provide an appraisal of the effects of the Project on the AONB special components, characteristics and qualities set out in the Kent Downs</p>

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		<p>Area of Outstanding Natural Beauty Management Plan 2021–2026 (Kent Downs AONB Unit, 2021), leading to the assessment of a moderate adverse significance of effect by the design year.</p> <p>In response to paragraph 5.13, it is noted that Kent Downs AONB Unit agree with the magnitude of effects reported during construction and at the opening year for most of the visual receptors within the AONB.</p> <p>The heights of established mitigation planting that have been assumed in the landscape and visual impact assessment at design year are stated in paragraph 7.3.92 of ES Chapter 7: Landscape and Visual [APP-145]. These heights are considered to be a reasonable reflection of likely growth rates over a 15 year period.</p> <p>In response to paragraphs 5.14 and 5.15, traffic and highway infrastructure and occasional passing trains along the A2 and HS1 corridors are apparent in existing summer and winter views, from Representative Viewpoint S-03, as well as industrial buildings at Harlex Haulage. There would be some vegetation removal in this area, which would increase visibility of the A2 and HS1 corridors to a degree, although some vegetation would be retained to the north of Harlex Haulage and Park Pale and within the field between the viewpoint and Park Pale, as shown on ES Figure 7.24: Tree Removal and Retention Plan [APP-261]. Construction works would be noticeable within this view, but in the context of the existing road corridor. On completion of construction, the modified A2 corridor would be perceptibly more visible, with slightly less enclosure as a result of vegetation removal and the new access tracks would be seen in the context of existing buildings at Harlex Haulage.</p> <p>The effects at Representative Viewpoint S-03 have been assessed as beneficial due to the establishment of ancient woodland compensation planting, which would largely screen views towards the A2 and HS1 corridors in keeping with the existing wooded character of the locality.</p> <p>The magnitude levels of effect set out for the construction stage, opening year and design year in ES Appendix 7.10: Schedule of Visual Effects [APP-385] for Representative Viewpoint S-03 are therefore considered appropriate.</p> <p>In response to paragraph 5.16, the heights of established mitigation planting that have been assumed in the landscape and visual impact assessment at design year are stated in paragraph 7.3.92 of ES Chapter 7: Landscape and Visual [APP-145]. These heights are considered to be a reasonable reflection of likely growth rates over a 15 year period.</p> <p>In the opening year, much of the Project route would be screened by vegetation along Shorne Ifield Road. From Representative Viewpoint S-29, traffic and highway infrastructure would be largely screened within the cutting along the South Portal Approach road, although the linear cutting would be visible and the chalk substrate would be apparent along the upper edges of the cutting. The Chalk Park hilltop landform would be visible in the midground; however, distant views across the River Thames would be maintained. The magnitude and significance levels of</p>

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		<p>effect set out for the opening year in ES Appendix 7.10: Schedule of Visual Effects [APP-385] for Representative Viewpoint S-29 are therefore considered appropriate.</p> <p>In response to paragraph 5.17, the methodology for assessing the sensitivity of users of the Project route is set out in paragraphs 1.3.7 to 1.3.15 of ES Appendix 7.13: Views from the Road Assessment [APP-388]. As stated in paragraph 1.3.13, although people travelling along the M2/A2 corridor would be within the Kent Downs AONB, <i>'the Project is unlikely to be used as a 'scenic' route'</i>. In addition, as set out in paragraph 1.3.14 <i>'views would not be a key aspect of the journey'</i>. An assessment of medium sensitivity for users of the Project route through the Kent Downs AONB therefore seems reasonable, given the low susceptibility of road users to the nature of proposed change. Medium sensitivity is greater than that suggested for <i>'users of main roads...on main arterial routes'</i> in Table 3.4.1 of Design Manual for Roads and Bridges LA107 Landscape and Visual Effects (Highways England, 2020), which suggests low sensitivity.</p> <p>The assessment of the magnitude of change in views reported in ES Appendix 7.13: Views from the Road Assessment [APP-388] takes into consideration the effect of existing highway infrastructure featuring lanes of traffic, lighting columns, gantries and road signs, which dominates the views of road users traveling along the M2/A2 corridor within the Kent Downs AONB. The assessment also considers the fleeting nature of views, channelled between lanes of traffic and adjoining cutting slopes or woodland, offering little opportunity to appreciate the view. The predicted minor adverse magnitude of change assessed in ES Appendix 7.13: Views from the Road Assessment [APP-388] at Viewpoint 1 is therefore considered to be appropriate, in that <i>'there would be a perceptible change in view but this would not alter the overall balance of features and elements that comprise the existing view'</i> (Table 1.1 Indicative criteria used to define magnitude and nature of visual effect).</p> <p>6. Mitigation (paragraphs 6.1 – 6.6)</p> <p>In response to paragraph 6.1, the Applicant's position can be found at item 2.1.17 of the AONB Unit's SoCG, which is a matter not agreed [REP1-063].</p> <p>In response to paragraph 6.2, in discussion with Natural England, an opportunity has been identified to enhance the user experience of Brewers Road green bridge and Thong Lane green bridge south, through the detail distribution and design of the environmental mitigation areas on both bridges. To make provision for the enhanced design and provide greater certainty on delivery, it is proposed to supplement the existing clause S1.04 and delete existing clause S1.17 of the Design Principles [APP-516]. The amended principles will be submitted into Examination when the Design Principles are next updated.</p>

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		<p>It is assumed that the AONB Unit means 'woodland planting to the north of High Speed 1 Rail Line', since the existing mature woodland to the south of HS1 would be retained, apart from the removal of a small group of existing trees adjacent to Brewers Road. Space for proposed reinstatement planting to the north of HS1 (between the railway line and M2/A2 corridor) is limited and constrained by utility corridors. Therefore, in order to create a sense of woodland character, proposed mitigation planting comprises:</p> <p>A linear belt of shrubs and trees between the M2/A2/A12 Lower Thames Crossing junction and the Halfpence Lane roundabout, shrubs with intermittent trees between the Halfpence Lane roundabout and Brewers Road green bridge, and a principally linear belt of shrubs and trees between Brewers Road green bridge and Park Pale bridge.</p> <p>In response to paragraphs 6.1 and 6.2, Ancient Woodland compensation planting is proposed to the north of Park Pale bridge, to the east of Shorne Woods Country Park, as shown on Environmental Statement Figure 2.4: Environmental Masterplan Sections 1 & 1A (1 of 10) [APP-159]. Clause S1.08 of the Design Principles [APP-516] requires the design of this woodland to retain key views from the upper slopes of the new woodland planting area across the M2/A2 corridor to the Darnley Mausoleum within Cobham Park Registered Park and Garden of Special Historic Interest, as well as views to the wider Kent Downs AONB.</p> <p>This includes Representative Viewpoint S-03, shown on ES Figure 7.16: Visual Effects Drawing with Representative Viewpoint and Photomontage Locations [REP1-128].</p> <p>The semi-circle of land between the A2 and Park Pale overbridge slip road is constrained by utilities and the scope for planting is therefore limited to shrubs with intermittent trees, as shown on ES Figure 2.4: Environmental Masterplan Sections 1 & 1A (1 of 10) [APP-159]. The intention of the proposed planting is to reflect the wooded character of the locality, as far practicable.</p> <p>In response to paragraphs 6.3 to 6.6, the Applicant's position can be found at item 2.1.32 of the AONB Unit's SoCG which is a matter not agreed [REP1-063].</p> <p>7. Compensation (Paragraphs 7.2 – 7.13)</p> <p>In response to paragraph 7.2, the Applicant's position can be found at item 2.1.37 of the AONB Unit's SoCG [REP1-063]. The Applicant is engaged in constructive ongoing discussions regarding appropriate compensation for the harm to the Kent Downs AONB. For clarity, paragraph F.3.5 of the Planning Statement Appendix F: Kent Downs Area of Outstanding Natural Beauty [APP-501] simply identifies mitigation and compensation measures that are in the Kent Downs AONB; it does not state that the measures compensate for the harm to the AONB arising from the Project.</p> <p>In response to paragraph 7.3, the Applicant's position can be found at item 2.1.17 of the AONB Unit's SoCG [REP1-063].</p>

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		<p>In response to paragraphs 7.4 - 7.13, the Applicant's position can be found at item 2.1.26 of the AONB Unit's SoCG [REP1-063]. The Applicant is continuing to work collaboratively with the AONB Unit to consider their suggestions for additional compensatory enhancement measures, which are subject to ongoing discussion.</p> <p>8. Control Documents (Paragraphs 8.1 – 8.6)</p> <p>In response to paragraphs 8.1 - 8.3, the Applicant's position can be found at item 2.1.38 of the AONB Unit's SoCG [REP1-063]. The draft DCO states that the authorised development must be designed in detail and carried out in accordance with the Design Principles and the preliminary scheme design, unless otherwise agreed in writing. The wording maintains a degree of flexibility for the detailed design to respond to practical design considerations. However, the requirement for the design to be in accordance with the Design Principles would ensure that the underlying requirements of each principle are met.</p> <p>In response to paragraph 8.3, Clause S1.09 refers to 'Retaining structures and bridge abutments' rather than 'Park Pale Lane Screening' as the AONB Unit has stated [APP-516]. The acoustic barrier along Park Pale was removed from the Project in response to the AONB Unit's concerns.</p> <p>The Applicant will consider the request for additional design principles / amendments to existing design principles detailed in paragraphs 8.4 and 8.5 and will respond at a future deadline.</p> <p>In response to paragraphs 8.5 and 8.6, the Applicant's position can be found at item 2.1.39 of the AONB Unit's SoCG [REP1-063]. The Applicant has updated the outline Landscape and Ecology Management Plan (oLEMP) [REP1-173] at Deadline 1 to include the AONB Unit as a named consultee in Table 2.1. Paragraph 4.1.13 of the oLEMP [REP1-173] also commits to the advisory group including a representative of the Kent Downs AONB Unit. The Applicant will consider the AONB Unit's request for their input to be fully funded.</p>

Annex A- Responses to Natural England’s Written Representation, by theme

Key issue / advice within Natural England’s Written Representation		Applicant’s Response
Securing mechanisms should be detailed and unambiguous and that terminology “ <i>which allow for significant deviation from the measures which are presented within the Environmental Statement</i> ” should be removed		The Applicant considers that the control documents are sufficient to secure the objectives of ecological mitigation and that the terminology such as ‘wherever practicable’ is necessary to provide the flexibility required during the detailed design and delivery.
Further work and stronger commitments should be provided including clearer parameters within which the detailed design will be delivered, including the following rows in this table:		The Applicant is considering and will consult on a process for the development of the detailed design (including the consultation process within it) to ensure that the measures proposed and secured in the DCO will deliver the required objectives. The Applicant has engaged with, and will continue to engage with, relevant stakeholders (including Natural England) in developing that process.
Greater clarity should be provided on the detailed design and habitat creation and management prescriptions and functions, including for: <ul style="list-style-type: none"> • SSSI compensation areas • Ancient woodland compensation and replacement woodland • Open mosaic habitat • Acid grassland creation • HRA mitigation at Coalhouse Point • Footpath to bridleway upgrade at Bowaters scrublands 		The Applicant considers that suggestions regarding a number of proposed mitigation and compensation measures are of a similar nature. The Applicant considers that the proposed detailed design process will allow all mitigation and compensation measures to be developed in a consistent and transparent way that will address the issues raised by Natural England across all measures.
Greater clarity on detailed design and prescriptions suggested, including	Incorporating information received since the application and necessary preconstruction surveys	The detailed design process will be able to consider new information, including pre-construction survey information, in fine-tuning design and prescriptions.
	The design and delivery should follow the mitigation hierarchy, especially in relation to impact avoidance (in the context that a worst-case scenario was used in the assessment)	The ecological assessments are consistent with policy and guidance by assessing the worst-case scenario. Mitigation and, as a last resort, compensation are proposed where impacts cannot be guaranteed to be avoided, consistent with the mitigation hierarchy. The detailed design process will consider the possibility of retention of existing ecological features in line with the mitigation hierarchy.

	Balance of the needs for the range of target features and the possibility of incorporating requirements of rare or notable species	The detailed design process will include consideration of the needs for target species and develop a balanced approach to provide the best possible ecological outcomes. Incorporation of design and prescriptions for other features such as rare or notable species will be considered where they do not compromise the needs of the target features.
	Use of an 'indicators of success' approach considering the functioning of the habitat to ensure that it works from an ecological perspective with key species groups being monitored alongside the habitat	The detailed design process will develop outcome-based objectives that can be monitored. Prescriptions will be developed to achieve those objectives.
	Ratios, locations and connectivity of elements of heterogenic habitat mosaics	The detailed design process will develop outcome-based objectives for all target features and the prescriptions to achieve those objectives will include spatial distribution (including the connectivity between existing and new habitats) of the different elements of habitat creation to achieve the best ecological outcomes.
	Consideration of options and their relative certainty of effectiveness such as water supply options, micro-location to avoid disturbance, and choice of substrate types and depths	The detailed design process will develop specific designs and prescriptions to achieve the outcome-based objectives. The process will consider what options are available to achieve the objectives and propose only those that are certain to deliver the objectives and have the least impact on existing features. It is not necessary to consider options at consenting as long as feasible options are available. The Applicant is confident that all proposed mitigation and compensation measures are feasible.
	Detail of how each prescription relates to target habitats / species / ecological condition	The detailed design process will include outcome-based objectives based on the target features. Such outcome-based objectives will be inherently related to the target features and their target condition. Prescriptions will be developed to achieve the objectives and so will be inherently related to target features as well.
	Site preparation measures such as topsoil stripping and soil translocations	The detailed design process will include the consideration of existing environmental conditions and how they influence the achievement of the objectives. Where preparatory measures are required to be confident the objectives will be achieved, they will be included in the design.

	Site establishment prescriptions such as use of natural regeneration or seed sources	The detailed design process will include establishment prescriptions to achieve the outcome-based objectives. It is not appropriate to prescribe a preference for any particular approach as all sites will have different objectives and existing conditions, which may or may not mean that any type of measure is preferred or not.
	Site management such as grazing / mowing, salinity management, retention of bare ground, etc.	The detailed design process will include long term management prescriptions to achieve the outcome-based objectives through maintenance of the established habitats. It is recognised that consideration of long-term management prescriptions is necessary at the same time as establishment prescriptions to ensure the habitats created are maintainable. It is not appropriate to prescribe a preference for any particular approach as all sites will have different objectives and existing conditions, which may or may not mean that any type of measure is preferred or not.
	Site governance such as monitoring and adaptive management	The detailed design process will develop outcome-based objectives. These will be the basis of monitoring plans developed to audit the achievement of the objectives. Where monitoring demonstrates that objectives have not been achieved, it will be necessary to adapt prescriptions to ensure the objectives are met in order to fulfil the requirements of the DCO.
	Programming of delivery of measures at the earliest opportunity	The detailed design process will develop detailed programming of all measures at the earliest opportunity in the context of constraints.
	Greater clarity on how mitigation and compensation measures for ecological impacts will not have additional impacts on other receptors such as the Kent Downs Area of Outstanding Natural Beauty or other ecological receptors such as long eared owl	The detailed design process will consider the potential for impacts on (and potential opportunities for enhancement of) ecological and other environmental receptors as part of the context within which design and prescriptions are developed. The environmental assessments have assessed impacts on all environmental features on a worst-case scenario, including the potential impacts from the ecological mitigation and compensation proposals. No additional impacts would occur beyond those already assessed. The detailed design process will develop a balanced approach to minimise impacts and maximise enhancements wherever compatible with the outcome-based objectives of the target features.
	Greater clarity on how stakeholders' views will be taken into account in the development of detailed design and delivery, including "dispute resolution"	The detailed design process will include stakeholder engagement in all phases of the design, including developing a framework of consistent

<p>and response to situations where proposed measures prove impossible, including requirement for an independent resolution</p>	<p>principles to design within, optioneering and decision making, and detailed prescription development. The detailed design will be incorporated into the EMP iteration 2 which will be submitted to the Secretary of State for approval before commencement of relevant works. As such the Secretary of State will provide an independent role in approving (or not) the EMP(2) in light of the consultation responses from stakeholders.</p>
<p>That there is insufficient certainty and securing of required long-term management in perpetuity, with suitable governance structures to ensure that monitoring of the site enables adaptive management change to be successfully implemented. Greater clarity should be provided on the management and monitoring measures proposed for a robust monitoring and feedback mechanism to deliver any necessary remedial measures to ensure the objectives of the mitigation are delivered in full</p>	<p>The Applicant considers that the control documents sufficiently secure the effective establishment and maintenance of all of the ecological mitigation and compensation measures. The Applicant will be responsible for delivery and maintenance of all measures. Delivery will be undertaken by Contractors and audited by the Applicant. Long-term management will be delivered through the Applicant’s operational teams (where they lie within the maintainable highway boundary) and by management partners (audited by the Applicant) where they lie outside the maintainable highway boundary. To inform detailed design, the Applicant is considering and will consult on the process for ensuring long term maintenance of the measures through operational teams and procurement of suitable management partners.</p>

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