

**Appendix 7a: Landscape & Visual**

LIR Reference	LIR Reference Local Impact Report Extract / Applicant's Response/GBC Response to Applicant's Comments
<p>LIR Appendix 7a Landscape &amp; Visual – Methodology and assumptions. Section 7.4</p>	<p>Nationally recognised sources of standards and guidance have been used to inform the assessment. However, there appear to be some inconsistencies between the 2020 and 2022 versions of LTC document 6.1 Env Statement Ch 7. They each state that the assessment follows DMRB methodology (Design Manual for Roads and Bridges (DMRB) LA 107 Landscape and Visual Effects (Highways England, 2020a), but the 2020 version adds 'and relevant guidance including LI and NE publications' whilst the 2022 version changes this to 'also having regard to the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment (IEMA), 2013)' A subtle change, but the more recent version removes the need for the assessment to be guided by the GLVIA. However, GLVIA (3rd edition) is specifically referenced as guidance to assist in addressing landscape issues in para 5.144 (and footnote 102) of the National Policy Statement for National Networks (NPSNN). GBC would be concerned if the Applicant has materially departed from GLVIA guidance in its assessment, and clarification is requested on this point.</p>
<p>Applicant's Response</p>	<p>It is assumed that by the "2020 version" of ES Chapter 7: Landscape and Visual, the LIR is referring to the DCO application that was withdrawn in November 2020; the version of ES Chapter 7: Landscape and Visual contained in the withdrawn DCO application was superseded by <a href="#">[APP-145]</a>, as submitted in October 2022.</p> <p>The Landscape and Visual Impact Assessment in the current DCO application has not departed from the Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment, 2013). The introduction to ES Chapter 7: Landscape and Visual specifically states that the assessment <b>also has regard to GLVIA3</b>. Due to the nature of the Project, the <b>primary guidance document followed has been DMRB LA 107</b> Landscape and Visual Effects (Highways England, 2020). Section 7.3 of ES Chapter 7: Landscape and Visual provides a full list of the standards and guidance documents that have been used in preparing the methodology for data collection and assessment of landscape and visual impacts.</p>
<p>GBC Response to Applicant's Comments</p>	<p>The Applicant's response is noted.</p>
<p>LIR Appendix 7a</p>	<p>As the KDAONB is a landscape of national importance, the Susceptibility should be 'High' or 'Very High' in line with the methodology. The applicant is requested to reconsider the ratings for Susceptibility of the LLCAs, and the reasons for</p>

Landscape & Visual – Susceptibility of LLCAs. Paragraph 7.6.5	changes in the assessment since 2020.
Applicant's Response	<p>For response to comments on the assessment of susceptibility within the West Kent Downs (sub-area Cobham) Local Landscape Character Area (LLCA), reference should be made to the response provided on the assessment of landscape effects below (response to paragraph 7.7.2, and additional text in paragraphs 7.7.1, 7.7.4, 7.7.6 and 7.7.8 and in Table 7.1).</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.</p> <p>There have been <b>several Project design changes and further development of the Project definition</b> 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, <b>the definition of baseline landscape and visual conditions has also been critically reviewed and updated since October 2020</b>. The ES Chapter 7: Landscape and Visual submitted with the current DCO application should therefore be read as a standalone assessment, and should not be compared to the version that was withdrawn in late 2020 and <b>is of no relevance to the current application</b>.</p>
GBC Response to Applicant's Comments	<p>The methodology and guidance used for the 2022 assessment are essentially the same as were used to inform the 2020 assessment, so <b>the Applicant is requested to explain the justification for changes in the latest Landscape and Visual Impact Assessment (LVIA)</b></p> <p>The Applicant's response does not provide a justification for the changes in definition of baseline conditions between the two submissions (2020 and 2022). The landscape baseline has not changed since October 2020. Although visual baseline data may require updating to reflect modifications to the design (ref GLVIA3), the Applicant does not explain how the design changes have resulted in changes to the visual baseline. <b>The reasons for the review and update of baseline conditions by the Applicant should be made clear.</b></p>

	<p>The Applicant refers to Project design changes and further development of the Project definition since the DCO application made in October 2020 was withdrawn. It is unclear how the changes referred to could result in the level of changes to the assessment.</p> <p>It is noted that the ExA has requested Utility Diversions to provide a specific Utility Diversions Assessment for LVIA purposes (ref Q12.2.8)</p>
<p>LIR Appendix 7a Landscape &amp; Visual – LLCA boundaries. Paragraph 7.6.6</p>	<p>(i) The boundary between the West Kent Downs (sub-area Shorne) and West Kent Downs (sub-area Cobham) LLCAs in the documents does not accord with the boundary shown in the Kent Landscape Assessment, and Kent County Council's map records. The LVIA shows the boundary between the two sub areas to be formed by the southernmost carriageway of the A2, but the Kent CC mapping shows the east bound carriageways are in Shorne and the west bound carriageways and central reservation are in Cobham.</p> <p>(ii) Our response: It is considered that the position of the boundaries of these LLCAs may have an influence on their assessment of effects, as it brings much more of the proposed works into the Cobham Sub Area, and correspondingly reduces those in the Shorne Sub Area. Accordingly, we would request the applicant reviews the boundary and considers a reassessment in the light of the revision. (see also Table 7.1 West Kent Downs (Sub area Cobham) our response to the assessment - below).</p>
<p>Applicant's Response</p>	<p>As stated in ES Chapter 7: Landscape and Visual [APP-145], LLCA boundaries within the Kent Downs Area of Outstanding Natural Beauty (AONB) have been based on the Kent Downs AONB Landscape Character Assessment Update (Kent Downs AONB Unit, unpublished at the time of DCO application; published in January 2023) rather than The Landscape Assessment of Kent (Kent County Council, 2004).</p> <p>Paragraph 7.3.58 of ES Chapter 7: Landscape and Visual notes that: <i>'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.'</i></p> <p>This approach is consistent with best practice guidance in the Guidelines for Landscape and Visual Impact Assessment, Third Edition (Landscape Institute and Institute of Environmental Management &amp; Assessment, April 2013), which in relation to using existing character assessments, states at paragraph 5.15 that: <i>'Existing assessments may need to be reviewed and interpreted to adapt them for use in LVIA... Fieldwork will also be</i></p>

	<p><i>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 our review of the West Kent Downs (sub area Cobham) LLCA and from our site visits, we are 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.</p> <p>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>GBC Response to Applicant's Comments</p>	<p><b>Source information for LLCA boundaries</b></p> <p>There is some confusion regarding the Applicant's assertion that "LLCA boundaries within the Kent Downs Area of Outstanding Natural Beauty (AONB) have been based on the Kent Downs AONB Landscape Character Assessment Update (Kent Downs AONB Unit, unpublished at the time of DCO application; published in January 2023) rather than The Landscape Assessment of Kent (Kent County Council, 2004)."</p> <p>It is understood (from the KDAONB Unit) that the boundaries shown in Kent County Council's 2004 Landscape Character Assessment are the same as those shown in the Kent Downs LCA Update in this location i.e. the boundary between the West Kent Downs (sub area Shorne) and the West Kent Downs (sub area Cobham) LLCAs.</p> <p><b>Landscape Character Assessment carried out by competent authorities</b></p> <p>The Applicant states 'the boundaries of the published character areas have been slightly adjusted through detailed study and analysis undertaken for the LVIA in this chapter.' The Applicant references GLVIA3 paragraph 5.15 in justification of their proposed change in the LLCA boundaries. GLVIA3 Paragraph 5.12 (at the start of the section 'Using existing character assessments' from which the Applicant has quoted) states '<i>Those (Character Assessments) published and adopted by competent authorities are usually the most robust and considered documents.'</i></p>

While it is acknowledged that Landscape Character Assessments, where out of date, may not reflect changes in the landscape in the intervening years, the Kent Downs AONB Landscape Character Assessment Update - published in January 2023 - is up to date.

#### **Effect of Project on Landscape Character**

We would suggest that the proposed Project will be the main cause of change to landscape character in the Cobham sub-area LCA. Our initial response to the latest proposals (Appendix 7a) raised concerns about the extent of clearance of vegetation, road widening and associated infrastructure along the transport corridor, necessary for the requirements of the Project. These works will greatly exacerbate the real and perceived severance of the KDAONB, during Construction and Operation phases.

The Applicant states that the overall conclusion of the LVIA for the combined areas of the West Kent Downs LCA would not differ if the boundary was changed. We disagree. As the overall assessment for the combined LCA is a bringing together of the two assessments, then it is difficult to understand how this can be the case. Further, it remains the case that the assessment results of the LVIA for sub area Cobham are reduced as a result of the change in boundary.

#### **Earlier proposal by the Applicant to change the LCAs in the Gravesham area**

There has been a previous attempt by the Applicant to make changes to the Landscape Character Areas in the Gravesham part of the Project area. In 2020 the Applicant proposed changes to LCAs which would have resulted in further sub-division of existing LCAs. A new sub-area of 'A2/HS1' - the creation of a new transport corridor area - and a number of corresponding LLCAs, namely Ranscombe Farm (sub-area A2/HS1 Corridor), West Kent Downs (sub-area A2/HS1 Corridor), Higher Arable Farmland (sub-area A2/HS1 Corridor) and Gravesend Southern Fringe (sub-area A2/HS1 Corridor) (see Environmental Statement Figure 7.2 Page 1 of 8 drawing no HE540039-CJV-ELS-SZP\_EGNE00000000-DR-LE-50021) This proposal was later withdrawn, but was clearly an attempt to re-define the local landscape character.

GBC comments on the proposal at the time included the following:-

*'Due to the carriageway separation and the landscaping between the A2 and HS1 the effect of the transport infrastructure is significantly reduced. The presence of motorways and railways in an AONB is a matter of fact and not inherently a reason for a landscape zone of their own. In this area in particular there is an important historical component to be taken into account in that it was all part of the wider Darnley Estate, which was managed as a unit. Whilst the land ownership has fragmented over the years the area has none the less has retained its overall character.'*

	<p><b>It is our opinion that the fact that the landscape would be radically changed by the Project is something to be considered in the current landscape setting; and this proves the point of having landscape characterisation as a tool to provide logical, robust and defensible justifications for managing pressures for change, without diminishing the value of the landscape.</b></p>
<p>LIR Appendix 7a Landscape &amp; Visual – Assessment of landscape effects. Paragraph 7.7.2 (with additional text in paragraphs 7.7.1, 7.7.4, 7.7.6 and 7.7.8 and in Table 7.1)</p>	<p>The applicant is requested to consider the comments set out in Table 7.1 regarding changes to assessment results. Our proposed assessment ratings follow the guidance provided in Table 3.8.1. of DMRB LA 104 regarding Significance.</p>
<p>Applicant's Response</p>	<p>As stated above, 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>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>The Guidelines for Landscape and Visual Impact Assessment Third Edition (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> <p><b>Receptor sensitivity</b> Regarding the sensitivity of the West Kent Downs (sub area Cobham) LLCA, the retention of existing vegetation south of the HS1 corridor would ensure an effective landscape buffer was maintained between the Project and the LLCA. Therefore, the landscape would be largely shielded from construction works and the operational road and would have</p>

some ability to accommodate the Project without substantial loss to its overall integrity.

Regarding the sensitivity of the Shorne and Higham Marshes LLCA, the Project would be largely underground, therefore it would have the ability to accommodate change without substantial loss. The local landscape character within the Order Limits is influenced by Milton rifle range and associated intrusive fencing, as well as the urban areas of Chalk and Gravesend.

**Magnitude of effect during construction and opening year**

The magnitude of effect levels stated for the West Kent Downs (sub area Cobham) LLCA in construction and opening year within ES Appendix 7.9: Schedule of Landscape Effects [APP-384] are based on the LLCA boundaries shown on ES Figure 7.2: Local Landscape Character Areas [APP-198] (refer to response above on LLCA boundaries, paragraph 7.6.6). Effects within the West Kent Downs (sub area Cobham) LLCA would be largely indirect, with the key characteristics of the landscape largely unaffected, apart from a small group of trees along the northern edge of Cobham Hall Grade II\* Registered Park and Garden.

Construction works within the Gravesend Southern Fringe LLCA would be focused along the existing A2 corridor, which dominates the landscape character of this LLCA. The magnitude of effect level stated for the Gravesend Southern Fringe LLCA during construction in ES Appendix 7.9: Schedule of Landscape Effects takes into account the dominance of the existing A2 corridor. In addition, the key characteristics of the landscape would remain largely unaffected, apart from the removal of some tree planting at the Gravesend East junction.

**Magnitude of effect at design year**

Mitigation measures proposed along the M2/A2 corridor include replacement tree and shrub planting, two green bridges at Brewers Road and Thong Lane, and ancient woodland compensation planting north of Park Pale. In addition, there would be extensive woodland planting around the M2/A2/A122 Lower Thames Crossing junction to the west of the Kent Downs AONB boundary. The magnitude of effect levels stated for the West Kent Downs (sub area Shorne) LLCA and West Kent Downs Landscape Character Area 1A in design year within ES Appendix 7.9: Schedule of Landscape Effects, take into account the prominence of the existing A2 corridor in the landscape. A moderate adverse effect has been assessed in design year, which is significant.

As mentioned above, effects within the West Kent Downs (sub area Cobham) LLCA would be predominantly indirect, with the key characteristics of the landscape largely restored on establishment of mitigation planting. 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. These heights are considered to be a reasonable reflection of likely growth rates over a 15-year period.

	<p>The amount of woodland within the Shorne Wooded Slopes LLCA would be notably increased through the establishment of ancient woodland compensation planting and woodland habitat within the nitrogen deposition compensation sites. The heavily wooded slopes are a key characteristic of this LLCA and proposed woodland would enhance this key characteristic, therefore resulting in a moderate beneficial effect in design year.</p>
<p>GBC Response to Applicant's Comments</p>	<p>The Applicant states that the previous ES Chapter 7: Landscape and Visual contained in the withdrawn DCO application is not relevant to the current application. Although the previous version of ES Chapter 7 has been superceded, the document reports on the previous assessment. <b>The key issue here is not the inclusion of the previous version of ES Chapter 7, but the changes to the assessment from that time.</b></p> <p>See also the GBC response to Paragraph 7.6.5 above. The GBC response to paragraph 7.6.6. (above) is relevant here, as we disagree with the Applicant's reasons for changing the boundary between sub-area Shorne and sub-area Cobham LCAs. The change to the assessment for the West Kent Downs sub-area Cobham LCA appears to be the result of the change in boundary.</p> <p><b>This difference in assessment findings is important, as DMRB LA 104 EIA Methodology states 'moderate' residual effects can be considered to be material in decision making, 'slight' (or minor) residual effects are not material.</b></p> <p>It is noted that the ExA has required the Applicant to clarify why the sensitivity and magnitude of effects have been notably regraded since the 2020 submission. (Ref Q12.3.2)</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Assessment of landscape effects. Paragraph 7.7.6 (ii)</p>	<p>In addition, there would be impacts on cultural heritage, including an increased level of severance between the Grade II* Cobham Hall Registered Park and Garden to the south of the A2 and what was originally part of the park to the north, now largely contained within the Shorne Woods Country Park. Embedded mitigation in the form of tree and shrub planting along the transport corridor, and planting at Thong Lane south and Brewers Road green bridges will only provide partial mitigation of effects, as the increased width of the transport and infrastructure corridor will reduce the perceived relationship between the two areas of woodland that once formed part of the parkland and setting of Cobham Hall.</p>
<p>Applicant's Response</p>	<p>The Applicant acknowledges that the high-value designated Cobham Hall Grade II* Registered Park and Garden (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.</p>



	<p>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 to 6.6.272 and 6.6.283 of ES Chapter 6: Cultural Heritage [AS-044].</p> <p>The Applicant also believes that the creation of the green bridges would create a green link between Cobham Hall Grade II* Registered Park and Garden and Shorne Woods with which the asset is historically associated.</p>
<p>GBC Response to Applicant's Comments</p>	<p>The Applicant's response is noted. However, the proposals for the widened A2/M2 corridor will irrevocably change the character of the AONB in this area, and increase the severance of the historically linked landscape.</p> <p>Our comments on proposals for green bridges are made below in response to Paragraphs 7.15.3 (i) to (viii) (with additional text in paragraphs 7.15.1 (xiii), 7.16.3.3 (iv a, b and c))</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Assessment of landscape effects. Paragraph 7.7.6 (iii)</p>	<p>Further, works to the Halfpence Lane junction and local feeder road will require the loss of further areas of woodland, decreasing screening, and resulting in a more urbanised and visible transport corridor. Given the changes to the road arrangements at the Halfpence Lane junction, the applicant is requested to review the design of the roundabout junction with Brewers Road in order to improve the setting of the Grade II* Registered Park and Garden and Kent Downs AONB at this point. This may assist in compensating for the additional impacts resulting from the increased severance effect of the A2 transport corridor and associated works.</p>
<p>Applicant's Response</p>	<p>There would be a limited loss of existing trees to facilitate the proposed modifications to the Brewers Road, Halfpence Lane and Thong Lane roundabout to accommodate the local feeder road access. Existing vegetation would be retained along the south of Brewers Road within the Kent Downs AONB and Cobham Hall Grade II* Registered Park and Garden. Furthermore, commitment LV001 within ES Appendix 2.2: CoCP [REP1-157] requires the detailed design of the Project to reduce the removal of trees and vegetation as far as reasonably practicable.</p> <p>Vegetation removed around the Brewers Road, Halfpence Lane and Thong Lane roundabout would be reinstated, with additional mitigation planting proposed to the north of the roundabout, as shown on ES Figure 2.4: Environmental Masterplan Sections 1 &amp; 1A (1 of 10) [APP-159]. As noted in the visual impact assessment for Representative Viewpoint S-15 at design year within ES Appendix 7.10: Schedule of Visual Effects [APP-385], which is located adjacent to the Brewers Road, Halfpence Lane and Thong Lane roundabout, established mitigation planting '<i>would restore the screening in views towards vehicle movements and highway infrastructure along the widened A2 and the local distributor road, with slightly less of the highway corridor apparent compared to the existing view</i>'.</p>

GBC Response to Applicant's Comments	The Applicant's response is noted.
LIR Appendix 7a Landscape & Visual – Summary of landscape effects on the KDAONB. Paragraph 7.7.9 (ii)	Permanent changes to the landscape as a result of the changes to the A2 corridor and the proposed A2/LTC junction within the setting of the KDAONB; the A2 widening together with removal of key vegetation screening for the road and HS1, and the clearance of land and changes in landform comprise a number of issues in combination, and should be considered in totality for the effects/impacts and the overall landscape change which will result.
Applicant's Response	The overall effects of the Project on landscape character have been assessed for each of the affected LLCAs in ES Appendix 7.9: Schedule of Landscape Effects [ <a href="#">APP-384</a> ], including, as applicable: changes to the A2 corridor; the proposed M2/A2/A122 Lower Thames Crossing junction; removal of vegetation; and changes to landform.
GBC Response to Applicant's Comments	<p>See also comments made above re Paragraph 7.6.6 regarding the Applicant's change applied to the boundary between the Cobham sub-area and Shorne sub-area LLCAs.</p> <p>The altering of the boundary between these LLCAs is a significant issue.</p> <p>The overall effects on the Cobham sub-area LLCA are assessed as 'slight adverse', based on the revised boundary. The overall assessment of effects on this LLCA has therefore been assessed as not significant.</p> <p><b>Although the overall effects on the combined West Kent Downs LCA (including the LLCA sub areas of Shorne and Cobham) are assessed as 'moderate adverse' and therefore significant, the effects on the Cobham sub-area LLCA remain, in our opinion, underassessed.</b></p>
LIR Appendix 7a Landscape & Visual – Summary of landscape effects on the KDAONB. Paragraph 7.7.9 (iii)	Damage to the historic parkland landscape associated with Cobham Hall Grade II* listed Registered Park and Gardens on its northern perimeter resulting from the loss of the previous HS1 mitigation planting

Applicant's Response	Refer to response above on paragraph 7.7.6 (ii) for details of effects on Cobham Hall Grade II* Registered Park and Garden.
GBC Response to Applicant's Comments	See also comments made above re Paragraph 7.6.6 regarding the Applicant's change applied to the boundary between the Cobham sub-area and Shorne sub-area LLCAs and re Paragraph 7.7.6.(ii)
LIR Appendix 7a Landscape & Visual – Summary of landscape effects on the KDAONB. Paragraph 7.7.9 (iv)	Replacement/mitigation planting which may be inappropriate for the setting.
Applicant's Response	For response on the suitability of replacement/mitigation planting in the setting of the Kent Downs AONB, refer to responses to more detailed mitigation comments below (in relation to paragraph 7.14.4 (ii) onwards).
GBC Response to Applicant's Comments	The Applicant's response is noted. It is acknowledged that changes to species of plants may be necessary in order to ensure future resilience to climate change. It is understood that detailed design will be agreed in consultation with, inter alia, Natural England.
LIR Appendix 7a Landscape & Visual – Visual baseline. Paragraph 7.8.3	The applicant is requested to review the extent of the ZTV for the Northern Tunnel Compound operations, and to consider the extension of the ZTV to include areas south of the A2, in order that effects on the KDAONB in that area may be assessed. Also, to explain the type of operations proposed for the compounds, and the presence and heights of light sources at night.
Applicant's Response	The 5km Area of Search and therefore the extent of the Zones of Theoretical Visibility (ZTV) was agreed with stakeholders during consultation, as described in Table 7.2 and paragraph 7.3.40 of ES Chapter 7: Landscape and Visual [APP-145].  The northern boundary of the Kent Downs AONB would be approximately 4.7km away from the northern tunnel entrance compound. Although page 12 of ES Figure 7.8: ZTV - 5km DTM Analysis of Main Construction Compounds (1 of 2) [APP-204] illustrates visibility of the northern tunnel entrance compound as far south as the Kent Downs AONB, there would be few views of the compound from the AONB. Most elements within the compound would be barely

	<p>apparent at that distance, and would be seen in the context of large-scale urban development at Tilbury and Tilbury Docks. Even at Representative Viewpoint S-29 from Shorne Ifield Road on the edge of the Kent Downs AONB, and therefore at the closest point from the AONB to the northern tunnel entrance compound, the tallest elements in the compound (up to 25m high) would be prominent but would not be the focus of the view due to the distance, as explained in ES Appendix 7.10: Schedule of Visual Effects [<a href="#">APP-385</a>].</p> <p>Similarly, construction lighting within the northern tunnel entrance compound would be viewed at a distance and in the context of existing lighting at Tilbury and Tilbury Docks. Existing light sources along the northern bank of the River Thames are apparent in the night-time photographs for Representative Viewpoints S-32, S-33 and S-38a in ES Figure 7.18: Representative Viewpoints - Night-time (inc. Winter) Views [<a href="#">APP-243</a>]. In addition, construction lighting would be subject to control measures described in Section 6.8 of ES Appendix 2.2: CoCP [<a href="#">REP1-157</a>]. Information on construction compounds is provided in ES Chapter 2: Project Description [<a href="#">APP-140</a>].</p>
<p>GBC Response to Applicant's Comments</p>	<p>The Applicant's response is noted.</p> <p>Re Q12.3.6 - It is noted that the ExA has identified the lack of elevations in descriptions of construction compounds by the Applicant, and an absence of LVIA photomontages including the compounds. The ExA states the importance of the layout and appearance of the compounds to the LVIA during the construction period. Further the ExA has required the Applicant to provide photomontages of the compounds and hubs where they are sited within 100m of residential receptors and where those compounds or hubs are expected to remain in situ for more than 18 months.</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Assessment of Visual Effects. Paragraph 7.10.1 (with additional text in paragraphs 7.11.2 to 7.11.5, 7.12.1 (iv) and in Table 7.2)</p>	<p>Our response to the assessment of individual visual receptors is set out in Table 7.2: LVIA: Visual Effects Assessment - Analysis and Comments.</p>
<p>Applicant's Response</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 [<a href="#">APP-145</a>], and ES Appendix 7.2: Landscape and Visual Assessment Methodology [<a href="#">APP-377</a>].</p>

The Guidelines for Landscape and Visual Impact Assessment Third Edition (Landscape Institute and Institute of Environmental Management and Assessment, 2013) state under the heading of “Professional judgement in LVIA” on page 21, that ‘*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*’.

#### **Receptor sensitivity**

Visual receptors at Representative Viewpoints S-04, S-05, S-05a, S-08, S-09, S-12, S-13, S-14, S-15 and S-17 all lie within the Kent Downs AONB, with the exception of S-17, which lies on the edge of the AONB. 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]. This is 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. The approach to this is explained in paragraph 4.3.2 of ES Appendix 7.2: Landscape and Visual Assessment Methodology.

The sensitivity of visual receptors at Representative Viewpoint S-28, assessed in ES Appendix 7.10: Schedule of Visual Effects, relates to Table 3.41 of Design Manual for Roads and Bridges LA107 Landscape and Visual Effects (Highways England, 2020) where users of local/regional routes of moderate importance are considered to be of moderate sensitivity. In addition, the presence of the A2 corridor in existing views has been taken into account in the assessment.

The sensitivity of visual receptors at Representative Viewpoint S-29 within ES Appendix 7.10: Schedule of Visual Effects, relates to Table 3.41 of Design Manual for Roads and Bridges LA107 Landscape and Visual Effects (Highways England, 2020) where transient views from local/regional routes are considered to be of moderate sensitivity. In addition, the proximity of the road to the Kent Downs AONB has been taken into account, resulting in a high sensitivity, rather than very high sensitivity.

#### **Magnitude/significance level of effect during construction and opening year**

From Representative Viewpoint S-03, traffic and highway infrastructure and occasional passing trains along the A2 and HS1 corridors are apparent in existing summer and winter views, 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 existing infrastructure. On completion of construction, the modified A2 corridor would be perceptibly more visible, with slightly less enclosure as a result of vegetation removal. The magnitude and significance levels of effect set out for construction and opening year in ES Appendix 7.10: Schedule of Visual Effects for Representative Viewpoint S-03, are therefore considered appropriate.

From Representative Viewpoint S-15, views are dominated by the Brewers Road, Halfpence Lane and Thong Lane roundabout, as shown in ES Figure 7.17: Representative Viewpoints - Winter and Summer Views (2 of 8) [APP-236].

Construction works would be noticeable in the context of existing highway infrastructure. On completion of construction,

the highway layout would not appear notably different to existing, apart from there being slightly less enclosure as a result of vegetation removal. The magnitude and significance levels of effect set out for construction and opening year in ES Appendix 7.10: Schedule of Visual Effects for Representative Viewpoint S-15, are therefore considered appropriate.

From Representative Viewpoint S-24, the dominance of the M2/A2/A122 Lower Thames Crossing junction is acknowledged in ES Appendix 7.10: Schedule of Visual Effects, with a major adverse magnitude of effect assessed in opening year. In terms of the significance categories given in Table 3.8.1 of Design Manual for Roads and Bridges LA104 Environmental Assessment Methodology (Highways England, 2020) for a moderate (medium) sensitivity receptor and a major magnitude of change (effect), the higher category has been selected to reflect the prominence of the new junction in the view (large adverse). The magnitude and significance levels of effect set out for opening year in ES Appendix 7.10: Schedule of Visual Effects for Representative Viewpoint S-24, are therefore considered appropriate.

From Representative Viewpoint S-28, the M2/A2/A122 Lower Thames Crossing junction would be noticeable in views, in particular the Project road southbound to A2 westbound slip road viaduct, as illustrated in the photomontage within ES Figure 7.19: Photomontages - Winter Year 1 and Summer Year 15 (2 of 4) [APP-245]. However, views would be maintained to the wooded skyline within Shorne Woods, and traffic along the Project route north of the junction would be largely screened within cutting. In addition, the M2/A2/A122 Lower Thames Crossing junction would be in mid-range to long-range, wide views and seen in the context of the existing A2 corridor. Only one significance category is provided in Table 3.8.1 of Design Manual for Roads and Bridges LA104 Environmental Assessment Methodology for a moderate (medium) sensitivity receptor and a moderate magnitude of change (effect). The magnitude and significance levels of effect set out for opening year in ES Appendix 7.10: Schedule of Visual Effects for Representative Viewpoint S-28, are therefore considered appropriate.

From Representative Viewpoint S-29, the dominance of construction works in views is acknowledged in ES Appendix 7.10: Schedule of Visual Effects, with a major adverse magnitude of effect assessed during construction. In terms of the significance categories given in Table 3.8.1 of Design Manual for Roads and Bridges LA104 Environmental Assessment Methodology for a high sensitivity receptor and a major magnitude of change (effect), the higher category has been selected to reflect the prominence of construction works (very large adverse). At opening year, much of the Project route would be screened by vegetation along Shorne Ifield Road. In addition, 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 effect set out for construction and opening year in ES Appendix 7.10: Schedule of Visual Effects for Representative Viewpoint S-29 are therefore considered appropriate.

**Magnitude/significance level of effect of effect at design year**

Mitigation measures proposed along the A2 corridor include replacement tree and shrub planting, two green bridges at Brewers Road and Thong Lane and ancient woodland compensation planting north of Park Pale. In addition, there

	<p>would be extensive woodland planting around the M2/A2/A122 Lower Thames Crossing junction. 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. These heights are considered to be a reasonable reflection of likely growth rates over a 15-year period.</p> <p>The mitigating effect of proposed planting has therefore been taken into account in ES Appendix 7.10: Schedule of Visual Effects at Representative Viewpoints S-03, S-05a, S-08, S-11, S-12, S-13, S-14, S-15, S-17, S-18, S-20a, S-24 and S-28.</p> <p>Effects at Representative Viewpoints S-05a, S-11, S-17, S-18, S-24 have been assessed as large or moderate adverse, which is significant.</p> <p>Effects at Representative Viewpoint S-03 have been assessed as moderate beneficial due to the establishment of ancient woodland compensation planting, which would largely screen views towards the A2 and HS1 corridors.</p> <p>Proposed planting on both sides of the Brewers Road green bridge would improve the existing experience for users of the crossing at Representative Viewpoints S-12, S-13 and S-14, as the M2/A2 corridor would be less apparent when crossing the bridge.</p> <p>The magnitude and significance levels of effect set out for design year in ES Appendix 7.10: Schedule of Visual Effects for Representative Viewpoints S-03, S-05a, S-08, S-11, S-12, S-13, S-14, S-15, S-17, S-18, S-20a, S-24 and S-28. are therefore considered appropriate.</p>
<p>GBC Response to Applicant's Comments</p>	<p>It is acknowledged that there is scope for differences of opinion in assessment. The degree to which existing views of highways and other infrastructure may influence an assessment is a matter of professional judgement. However, the assessment findings have changed since the previous version in 2020. The applicant has not provided reasons to justify the changes in assessment results or the changes in assessment of baseline conditions.</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Assessment of Visual Effects. Paragraph 7.10.2</p>	<p>Although the effect of lighting has been included as part of the assessment, it is considered that the combined effects of lighting from various sources may have been underassessed. LTC document 6.2 Environmental Statement Figure 7.8 illustrates the extent of visibility of operations from construction compounds on the south and north sides of the River Thames. Although it is unclear what each of these operations may comprise, and whether they may be lit at night, there would be operations taking place of up to 25m in height. The document shows areas of Gravesham, including the KDAONB and a large expanse of the urban area in Gravesend, where operations would be visible from up to four construction compounds (see also Visual Baseline above) This is in addition to on-site works and accompanying lighting during the construction period, and subsequently, lighting emitting from moving vehicles after the scheme is open. Accordingly, the applicant is requested to review the assessment regarding the potential combined effects of light sources on receptors.</p>

<p>Applicant's Response</p>	<p>ES Figure 7.8: ZTV - 5km DTM Analysis of Main Construction Compounds (1 of 2) [APP-204] illustrates worst-case "bare earth" visibility. As noted on the figure, <i>'The actual extent of visibility is likely to be substantially less than shown on this figure, in particular within urban areas where with them exception of settlement edges, outward views are typically screened by existing buildings or other features'</i>.</p> <p>Information on construction compounds is provided in ES Chapter 2: Project Description [APP-140].</p> <p>Construction lighting would be subject to control measures described in Section 6.8 of ES Appendix 2.2: CoCP [REP1-157].</p> <p>Changes to night-time views that are likely to result from proposed lighting forming part of the DCO application, have been assessed within ES Appendix 7.10: Schedule of Visual Effects [APP-385], including any combined effects where lighting from more than one construction compound could be visible. For example, the Visual Impact Assessment for Representative Viewpoint S-32 during construction refers to both the southern and northern tunnel entrance compounds. Night-time effects from proposed lighting have been considered in the overall assessment of visual effects at each Representative Viewpoint and visual receptor, as stated in paragraph 7.3.18 of ES Chapter 7: Landscape and Visual [APP-145].</p> <p>The use of operational lighting as part of the Project would be minimised where safe to do so, and operational lighting would be <i>'controllable, directional and as low-level as is practicable and safe'</i>, as stated in clauses LST.02 and LST.03 of the Design Principles [APP-516].</p>
<p>GBC Response to Applicant's Comments</p>	<p>The Applicant's response is noted.</p> <p>See also responses to Paragraph 7.8.3</p> <p>Re Q12.3.6 - It is noted that the ExA has identified the lack of elevations in descriptions of construction compounds by the Applicant, and an absence of LVIA photomontages including the compounds. The ExA states the importance of the layout and appearance of the compounds to the LVIA during the construction period. Further the ExA has required the Applicant to provide photomontages of the compounds and hubs where they are sited within 100m of residential receptors and where those compounds or hubs are expected to remain in situ for more than 18 months.</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Comments on LVIA overall. Paragraph 7.12.1 (vi)</p>	<p>For the reasons outlined above, and set out in the assessment comments tables, we agree that the overall effect will be Adverse and Significant. However, it is considered that Large Adverse and Very Large Adverse effects to the landscape will not be localised, but will extend along and beyond the A2 transport and utilities corridor and extensively through areas of Green Belt land. In addition, the effects should be considered in combination with effects to heritage assets and loss of biodiversity. Further, it is considered that a number of residual visual effects are underassessed, and the applicant is requested to review the visual assessment.</p>



Applicant's Response	<p>Paragraph 7.9.22 of ES Chapter 7: Landscape and Visual [APP-145] concludes that <i>'the Project would result in a combined moderate adverse significance of overall landscape and visual effect on the existing landscape and visual amenity'</i>. The conclusion on overall effects takes account of the extensive mitigation measures proposed, including false cuttings, new planting, green bridges and the provision of substantial new areas of landscaped open space at Chalk Park adjoining the South Portal, and Tilbury Fields adjoining the North Portal.</p> <p>Intra-project effects have been considered in ES Chapter 16: Cumulative Effects Assessment [APP-154].</p> <p>For a response to comments on the assessment of visual effects, refer to response above (paragraph 7.10.1).</p>
GBC Response to Applicant's Comments	The Applicant's response is noted.
<p>LIR Appendix 7a Landscape &amp; Visual – Views from the Road Assessment – Analysis and Comments. VP 1. Paragraph 7.13.4</p>	<p>As the assessment and other background documents show (above), the views from the road at this location are, indeed, into woodland, which, together with the separation of carriageways provided by the wooded central reservation, provides enclosure and reduces the scale of the road, making the road a far less dominant feature of the user experience at this location. For the above reasons, we disagree with the assessment of sensitivity and of value (page 12).</p> <p>When comparing the existing viewpoint with that of the proposed development, the significant changes would suggest that the level of susceptibility to change of the user would be at least 'Moderate' (in accordance with guidance provided by DMRB LA 107 Table 3.41. which describes 'views from and of landscapes of regional importance' as having Moderate sensitivity; although the views in this location are to 'a designated landscape of national importance' – which would afford a sensitivity level of High).</p> <p>Similarly, the assessment of magnitude of change during the construction phase (page 12) hinges on the dominance of the road in the current view. The magnitude would be greater than suggested in the assessment. The view is not currently dominated by the road, as suggested in the document, but is enclosed by woodland, effectively reducing the real and perceived scale and dominance of the road.</p> <p>In the opening year, the document mentions at 1.6.16 the 'increased visibility of the new road infrastructure with new gantries, signs and barriers clearly seen across both carriageways, rather than the single carriageway currently visible'. This would be a very different landscape, with a far more 'urban' environment, unrelieved by the softening and enclosing effect of woodland planting.</p> <p>Accordingly, the effect of the removal of the enclosed woodland from both sides of the road, plus the removal of existing mitigation planting from the High Speed 1 route, and the removal of the important wooded central reservation, together with construction activity relating to the road, feeder/link roads and associated utilities works, would result in a substantial change, deserving of an assessment rating of 'Moderate Adverse' during the construction phase (and not Minor Adverse as the document suggests).</p> <p>Having considered the above points, the overall significance of the effect of the proposed development during</p>

	<p>construction, at opening year and at design year would be greater than the 'Slight Adverse' stated in the document and should be at least 'Moderate Adverse'.</p>
<p>Applicant's Response</p>	<p>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>Although taken from Park Pale overbridge, the baseline photograph at Representative Viewpoint S-05a within ES Figure 7.17: Representative Viewpoints - Winter and Summer Views (1 of 8) [APP-235] shows the type of existing views experienced by users of the A2 corridor, featuring lanes of traffic, lighting columns, gantries and road signs. The assessment of the magnitude of effect in views reported in ES Appendix 7.13: Views from the Road, therefore takes into consideration existing highway infrastructure and traffic, which dominate the views of road users travelling 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 effect assessed in ES Appendix 7.13: Views from the Road 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>GBC Response to Applicant's Comments</p>	<p>The issue here is not the use of the M2/A2 as a scenic route. Rather, the overall balance of features and elements that comprise the existing view.</p> <p>For Viewpoint 1 the view from the road is currently of a landscape of national importance. At present, the viewer (from the road) may perceive the designated landscape as a more enclosed and heavily wooded landscape, of smaller scale (due to the enclosing effect of the central wooded reservation, the viewer may not be aware of the opposite carriageway) and different from other sections of the A2/M2. This is supported by the Landscape of Kent Assessment (2004) (ref in initial response)</p> <p>The Applicant states that <i>'The road user's susceptibility to the change of the view is considered to be low throughout the Project.'</i> We would suggest this is not the case along the section of the A2/M2 where it crosses the KDAONB.</p> <p>However, the proposed Project would result in the loss of this distinctive section of roadside landscape, as the KDAONB would be transformed into a much-widened, urbanised, hard landscape, that could be anywhere.</p>

<p>LIR Appendix 7a Landscape &amp; Visual – Views from the Road Assessment – Analysis and Comments. VP 2. Paragraph 7.13.5</p>	<p>Given this scale of change, the assessment for susceptibility should be higher than that stated, thereby increasing the sensitivity assessment to at least ‘Moderate’. Further, the magnitude of change should be reassessed as ‘Major Adverse’ for the above reasons (i.e. ‘the project, or a part of it, would become the dominant feature or focal point of the view’ – see DMRB LA 107 Table 3.43 ) Photomontage S-22 (doc 6.2 ES Figure 7.19) clearly shows the effect the changes further west of the viewpoint. Unfortunately, a photomontage from S-23 (closer to the current VP 2) was not produced, as this would have shown the extent of change to the view in this area. Overall, considering the above suggested changes in assessment values, the significance of the effect should be greater than the ‘Slight Adverse’ of the assessment; and at least ‘Moderate Adverse’.</p>
<p>Applicant’s Response</p>	<p>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 [<a href="#">APP-388</a>]. As stated in paragraph 1.3.14, outside of the Kent Downs AONB, <i>‘it is not considered that the views from the road would be valued highly’</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 low sensitivity for users of the Project route outside of the Kent Downs AONB therefore seems reasonable, given the low susceptibility of road users to the nature of the proposed change. This is in accordance with the typical low sensitivity suggested for <i>‘users of main roads...on main arterial routes’</i> within Table 3.4.1 of Design Manual for Roads and Bridges LA107 Landscape and Visual Effects (Highways England, 2020). Paragraph 1.6.29 of ES Appendix 7.13 acknowledges that <i>‘For both eastbound and westbound travellers, the views along the road would dominate’</i>. A slight adverse significance of effect is in accordance with Table 3.8.1 of Design Manual for Roads and Bridges LA104 Environmental Assessment Methodology (Highways England, 2020) for a low sensitivity receptor and a major magnitude of change (effect). The lower of the two significance categories within Table 3.8.1 has been selected due to the dominance of the existing road corridor on views, as shown in the Representative Viewpoint S-22 and S-23 photographs included in ES Figure 7.17: Representative Viewpoints - Winter and Summer Views (2 of 8) [<a href="#">APP-236</a>].</p>
<p>GBC Response to Applicant’s Comments</p>	<p>The views of landscapes of regional importance afford a Sensitivity value of ‘Moderate’ (ref DMRB LA107 Table 3.41) as should be the case for eastbound (coastbound) viewers, where there is a stark contrast between the urban surroundings of Gravesend and the wooded surrounding of the designated landscape of national (i.e. greater) importance.</p> <p>DMRB LA107 states that the reporting of visual effects shall be informed by a range of factors, including the scale, nature and duration of change, screening, removal of past mitigation or existing vegetation, and the direction and focus of view. The scale of the proposal will be out of proportion to the current road and its infrastructure, and will result in a very different landscape; there will be large-scale removal of existing planting, and the introduction of different levels of carriageway including cuttings and flyovers. This will result in a significant change to the road and its setting in this area.</p>

	<p>GBC has requested improved visual materials in order to assess the visual effects of the proposed junction (A2/M2 with new A122) and surrounding works. GBC has seen a draft version of sections across the junction, and these clearly show the scale and extent of the proposed changes to the landscape . We consider it important that the finalised versions of these visuals be made available, in order that the full extent of visual and other effects may be better considered, and to inform this assessment.</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Views from the Road Assessment – Analysis and Comments. VP 3. Paragraph 7.13.6</p>	<p>The assessment assumes the opening year of the completed road to be the baseline. However, DMRB LA 104 (Highways England, 2020c) defines the baseline scenario as ‘a description of the current state of the environment without implementation of the project’.</p> <p>The Landscape Institute’s Technical Information Note 01/21 ‘GLVIA webinar Q&amp;As’ considers the difference between baseline reporting and assessment, and states: Baseline: analysing the site/area to describe and evaluate the existing condition. Assessment: evaluating the likely change as result of the development.</p> <p>GLVIA3 Para 3.15 states that ‘for the landscape baseline the aim is to provide an understanding of the landscape in the area that may be affected – its constituent elements, its character and the way this varies spatially, its geographic extent, its history, which may require its own specialist study, its condition, the way the landscape is experienced, and the value attached to it’.</p> <p>The landscape currently is open, with a golf course on the site of the proposed road development, and in an area of Green Belt, where ‘openness may be one of the aesthetic and perceptual aspects of the landscape. Green Belt is a planning policy designation and compliance with policy will be addressed separately to the LVIA’. (ref GLVIA3)</p> <p>There is currently no road present, and therefore no road users, so this cannot be a valid - or reasonable - starting point. As there is no current ‘view from the road’ a better starting point would be to review the nearby Representative Viewpoints from the LVIA. The difference would then be far greater and negative.</p>
<p>Applicant’s Response</p>	<p>Existing visual receptors at nearby Representative Viewpoints would be of a different type and sensitivity to future road users of the Project route on road opening. Furthermore, views experienced at existing ground levels are very different to those that would be experienced from a new road in cutting. An assessment using Representative Viewpoints as the baseline was therefore not considered appropriate for offline sections of the Project route.</p> <p>Paragraph 1.2.2 of ES Appendix 7.13: Views from the Road Assessment [APP-388], explains that this document is ‘<i>an appropriate design tool</i>’ that is used to inform ‘<i>the development of the road design, particularly the landscape and architectural elements</i>’. Effects relating to the Project on the existing landscape and views have been fully assessed in ES Appendix 7.9: Schedule of Landscape Effects [APP-384], and ES Appendix 7.10: Schedule of Visual Effects [APP-385].</p>

GBC Response to Applicant's Comments	<p>The point of debate here is the baseline situation. There seems little point in assessing the view from the road when the baseline situation cannot be assessed as it exists only below current ground level. The baseline is surmised, and only useful presumably as a guide to the driver experience once the road is constructed.</p> <p>The Applicant's submission (ES Appendix 7.13: Views from the Road Assessment [APP-388]) states at paragraph 1.3.4 <i>'Establishing the baseline: Sections of the Project would be new road where none currently exists. In these locations, there is no existing view from the road. Establishing the baseline view in these locations is problematic as there is no existing receptor.'</i></p> <p>Visual materials that show the proposed view from the road at this point would be helpful.</p>
LIR Appendix 7a Landscape & Visual – Mitigation. Paragraph 7.14.4 (ii)	<p>Native planting should be used wherever possible. It is unclear why non-native planting has been proposed e.g. on land to the east and north-east of the proposed south tunnel entrance. In addition, the layout of planting in this area should strive to recreate the field pattern with hedgerows to replace those lost by the scheme where possible.</p>
Applicant's Response	<p>Outside of the Kent Downs AONB, where it is not proposed to use non-native species, proposed planting mixes would predominantly comprise native species with a small percentage of non-native species considered where appropriate, in accordance with Clause LSP.02 Planting Strategy in the Design Principles [APP-516]. Clause LSP.02 states that, <i>'The planting species mix shall be as diverse as reasonably practicable to ensure resilience against potential future diseases. It will include native species of local provenance and will also consider the inclusion of a small percentage of non-native species, where appropriate, in response to forecasted impacts of climate change. It shall comprise only 'plant healthy' accredited stock where reasonably practicable.'</i></p> <p>In terms of recreating the existing field pattern, Clause LSP.02 Planting Strategy of the Design Principles states that, <i>'The species mix and pattern shall take into account the historic landscape, underlying geology, aspect, level of disturbance/potential for remediation, and other local character features to ensure it will be suitable within its environs'</i>. Where possible, historic hedgerow patterns have been recreated, such as at the maintenance access track to the South Portal, which follows an historic lane.</p>
GBC Response to Applicant's Comments	<p>The Applicant's response is noted.</p> <p>It is understood that decisions on planting details will involve NE and other parties.</p>
LIR Appendix 7a Landscape & Visual – Mitigation.	<p>Screen planting is a key component of the approach to embedded mitigation. Although it is understood that mitigation planting may be designed to provide similar planting to that lost, it is also to be used as a method to screen undesirable views, and as an alternative to engineered solutions. Used in this way, screen planting may appear alien in the landscape.</p> <p>GLVIA3 Section 4.26 Re Mitigation states: <i>'...measures that are simply added on to a scheme as 'cosmetic' landscape</i></p>

Paragraphs 7.14.4 (iv) and (v)	<i>works, such as screen planting designed to reduce the negative effects of an otherwise fixed scheme design, are the least desirable.'</i>
Applicant's Response	<p>The Project design has intended to replicate existing landscape patterns and forms, as well as avoiding mitigation planting that would draw attention to the route alignment. The Project route should be subservient to the landscape in which it passes through.</p> <p>Clauses LSP.02 and LSP.07 within the Design Principles [APP-516] state that screen planting should reflect local context and historic character.</p> <p>A series of other measures have been included in the design to reduce landscape and visual effects, for example, the use of false cuttings as screening as discussed in Clause LSP.09 within the Design Principles.</p>
GBC Response to Applicant's Comments	The Applicant's response is noted. However, the introduction of a linear route through the landscape will, by its nature, cut across the landscape and its existing and historic patterns.
LIR Appendix 7a Landscape & Visual – Mitigation. Paragraphs 7.14.4 (vi) to (xi)	<p>LTC doc 6.1 Ch 7 refers to screen planting, and states heights of planting at Design Year (15 years) to be:</p> <ul style="list-style-type: none"> <li>a. 4.5m to 6m in height for oak and sweet chestnut;</li> <li>b. 6m to 10m for other trees;</li> <li>c. 3m for shrubs and scrub;</li> <li>d. 2.5m for managed hedgerows</li> </ul> <p>It is considered that the project has an over-reliance on planting to provide effective screening by the Design Year (within 15 years);</p> <p>The stated rates of plant growth will depend on a range of factors, e.g. size at time of planting, density of planting, soils, maintenance and watering regime.</p> <p>The mitigation planting for HS1 was planted in 2004 (and is, therefore, almost 20 years old) and is a useful and local comparator. It provides far less in the way of effective screening, than is shown in the proposal's photomontages.</p> <p>This has wider implications, as mitigation planting has been used as a means of reducing the overall significance of effects of the proposed development in a number of areas; E.g. LTC document 6.3 Appx 7.9 Schedule of Landscape Effects - Higham Arable Farmland (sub area Thong) LLCA Significance of effects (design year, Summer, operation) states: <i>'The significance of effect has been assessed as large rather than very large due to the establishment of mitigation planting that would help to integrate the Project into the surrounding landscape.'</i></p> <p>The significance of landscape effects on other LLCAs is similarly reliant on the anticipated maturity and cover provided by mitigation planting, for example in the above document - Gravesend Southern Fringe: <i>'The establishment of replacement tree and shrub planting at the Gravesend East junction and an extensive new linear tree and shrub belt</i></p>

	<i>along the southern edge of the modified A2 corridor would aid landscape integration. The planting would soften the appearance of earthworks, highway infrastructure and moving traffic and help reduce the perceptibility of these features in the wider landscape and their influence on tranquillity.'</i>
Applicant's Response	For responses to the effectiveness of screening by design year, refer to responses on assessment of visual effects above (in relation to paragraph 7.10.1).
GBC Response to Applicant's Comments	Screen planting is to be used extensively, to reduce the (landscape and visual) impacts of the Project. As previously stated, it is our opinion that the Project has an over-reliance on screen planting to minimise the negative effects of the Project.
LIR Appendix 7a Landscape & Visual – Mitigation. Paragraphs 7.14.6 (i) to (iii)	<p>Sites identified to provide ancient woodland compensation should, ideally, be capable of reproducing the optimum conditions for developing species-rich (ancient) woodland, over time, and preferably with a physical link to existing ancient woodland.</p> <p>The areas proposed as woodland planting to provide mitigation for lost Ancient Woodland and NDep compensation are currently Grade 2 agricultural land. Notwithstanding the loss of productive agricultural land, these areas may be less than ideal in terms of landscape suitability and their level of soil nutrients. (LTC document 6.2 ES Figure 10.4 Map 2 of 6 shows areas of agricultural land and their classification)</p> <p>It is understood that the planting proposed for the NDep compensation sites is predominantly woodland. Planting proposals for each of the proposed compensation sites should reflect ecological and landscape requirements appropriate to the locality, and be made in close consultation with stakeholders. The areas selected may not be suitable for wholesale conversion to woodland; topography, soils and local landscape should be guiding factors. A mosaic approach, including woodland, shaw woodland, parkland, wood pasture or orchards may be more appropriate, and potentially the retention of some areas of arable or pasture use. Consideration should also be given to considering the sites already identified (for ancient woodland mitigation) together with the NDep sites to provide the optimum suitability for particular planting.</p>
Applicant's Response	<p>A mosaic approach for nitrogen deposition compensation sites has been developed, and would be on a site-by-site basis, taking into account the local conditions. The oLEMP [REP1-173] provides the outline requirements for nitrogen deposition compensation sites, stating the following:</p> <p><i>'8.28.8 a. To establish a habitats mosaic including woodland and associated habitat that is closely aligned to the type of habitats that occur in the vicinity of the new habitat creation areas and is appropriate to the site conditions.</i></p> <p><i>b. To establish habitats preferentially through natural regeneration in consultation with stakeholders on appropriateness of this technique on a site by site basis.</i></p> <p><i>c. To establish the habitats whilst: i. avoiding significant effects on other receptors ii. taking opportunities to enhance public access and landscape'</i></p>

	<p>Each site also has specific management requirements in the oLEMP [APP-490] with objectives to consider landscape and existing conditions, as well as providing habitat mosaics most appropriate to the site.</p> <p>The percentage of woodland in nitrogen deposition compensation sites is expected to be approximately 70% across the Project, but this would vary on a site-by-site basis in relation to what is appropriate for that site, as developed in consultation with stakeholders.</p>
<p>GBC Response to Applicant's Comments</p>	<p>It is not clear how the 70% woodland figure has been arrived at, as the replacement planting should reflect the local landscape and the potential and suitability of the particular site.</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Mitigation. Paragraphs 7.14.6 (iv) to (vii)</p>	<p>The need for a comprehensive mitigation strategy: Mitigation should not disrupt or change the character of the landscape. The development of a mitigation strategy would provide the strategic context for restoration of the landscape as well as providing opportunities for wider landscape improvements.</p> <p>A Mitigation Strategy (which may extend beyond the scope of works associated with the road scheme) could:-</p> <ul style="list-style-type: none"> <li>a. take a strategic approach to the whole landscape to be affected and the wider impacts;</li> <li>b. be in place to take short, medium and long-term actions forward as necessary over the life of the scheme and beyond, and develop alongside the road design;</li> <li>c. help to address the severance of the protected landscape;</li> <li>d. address the loss of local amenity use to adjoining populations;</li> <li>e. address the severance and diversion of access routes, and the qualitative impacts on users (receptors);</li> <li>f. target areas that will help reconnect and strengthen habitats, the setting of heritage features and enhance landscape character;</li> <li>g. maintain and enhance long views and local views; to include long views to and across the Thames and from the Kent Downs;</li> <li>h. make links with other topics affected by this proposal, including biodiversity, cultural heritage, and public access;</li> <li>i. examine the remaining open space, cultural, environmental and access assets, and propose new, coherent networks that will make a positive contribution to the Green Network;</li> <li>j. Support the investment needed for infrastructure in the Green Network;</li> <li>k. contribute to modal shift and promote sustainable transport in the area;</li> <li>l. address the needs of cyclists and pedestrians;</li> <li>m. have the potential to address local deficits of open space and recreational facilities identified by Gravesham Borough Council.</li> </ul>
<p>Applicant's Response</p>	<p>A regional strategy was developed for the Project at a broad scale for the area south of the River Thames, with a strategic approach to the whole landscape. This is described in the Project Design Report Part D: General Design</p>



	South of the River [APP-509].
GBC Response to Applicant's Comments	The regional strategy the Applicant refers to is at a broad scale, and does not deal with local issues, or issues that might arise as a result of the Project outside of the red line boundary.
LIR Appendix 7a Landscape & Visual – Green bridges. Paragraphs 7.15.3 (i) to (viii) (with additional text in paragraphs 7.15.1 (xiii), 7.16.3.3 (iv a, b and c))	<p>In summary:</p> <p>The inclusion of green bridges into the LTC scheme is to be welcomed, but the design of those across the widened A2 should be enhanced.</p> <p>The provision of green bridges to improve connectivity is to be welcomed. However, the experience could be improved by better design.</p> <p>The proposal will result in large-scale severance of the landscape along its route. A number of public rights of way and other paths will be either extinguished or diverted, and the experience for users of paths and open spaces will be diminished as a result of the visual intrusion and/or increased noise from traffic on the proposed roads. The existing severance of the KDAONB along the A2/M2 will be increased, making this a significantly more difficult and hostile environment for wildlife and people.</p> <p>The design principles/management requirements (in the oLEMP and Design Principles document) should go further to ensure that the value and benefits of all three proposed green bridges are maximised.</p> <p>All proposed green bridges should at least meet the recommended standards in the L.I./N.E. Guidance.</p> <p>Given the impacts along the A2/M2 corridor and to the KDAONB and its setting, the proposed green bridges over the A2/M2 should:</p> <ol style="list-style-type: none"> <li>i. Be exemplars, of the highest quality, in design and construction;</li> <li>ii. Provide a key role in helping to reduce the real and apparent severance of the KDAONB;</li> <li>iii. Provide essential mitigation to help reduce the real and apparent landscape and visual impacts of the A2/LTC junction;</li> <li>iv. Perform the role of gateways into the KDAONB;</li> <li>v. Be considered as Project Enhanced Structures;</li> </ol> <p>All proposed green bridges should provide:</p> <ol style="list-style-type: none"> <li>i. Functioning ecological corridors;</li> <li>ii. Landscape connections;</li> <li>iii. Safe and welcoming environments for recreational users (walkers, cyclists and horse-riders) in this much-visited landscape. This to include wide areas of planting at both sides of the green bridges;</li> <li>iv. The applicant be requested to consider further options to enhance the design of the green bridges over the widened A2 to meet the requirements set out above, for recreational users crossing the Brewers Road and Thong Lane South green bridges.</li> </ol>

<p>Applicant's Response</p>	<p>The design of green bridges proposed as part of the Project is reported in Project Design Report, Part D: General Design South of the River [APP-509]. All three green bridges within Kent are maintaining road connections that already exist in those locations to avoid severance impacts as a result of the Project. In respect of the green bridges at Brewers Road and Thong Lane south, these would provide new habitat connections where they are currently absent due to the existing transport corridor of the A2, as well as helping to reduce the perception of separation in the landscape between the northern and southern parts of the Kent Downs AONB as a result of the road and rail corridors. The provision of green bridges is a benefit resulting from the Project, and is reported in ES Chapter 8: Terrestrial Biodiversity [APP-146] at paragraph 8.5.8; ES Appendix 7.9: Schedule of Landscape Effects [APP-384]; ES Appendix 7.10: Schedule of Visual Effects [APP-385]; and in the oLEMP [REP1-173] at paragraph 5.6.6.</p> <p>The specific design principles for green bridges are reported in the Design Principles [APP-516]. Clause STR.08 states that planting should tie in with the broader landscape to ensure connectivity, as well as enhancing the user experience. Clause S1.04 states that the detailed design of the bridges would provide connectivity of habitats, strengthen the wooded character, and act as local landmarks signalling entry into the Kent Downs AONB. Clause S2.04 states that Thong Lane North green bridge would be designed to extend the character of the well-vegetated Thong Lane, and to connect woodland to the east and west to provide a habitat corridor for mammals.</p> <p>The Applicant has considered the Landscape Institute and Natural England guidance on green bridges (Green Bridges, Technical Guidance Note 09/2015 (Landscape Institute, 2015) and Green Bridges, A Literature Review (Natural England, 2015)), which state: <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 design of the Brewers Road and Thong Lane south green bridges are appropriate to the target habitat connections, in this case dormice and small mammals. Added onto this width are the walking, cycling and horse riding routes and the road network, plus additional screen planting and hedgerows. The Applicant considers the width of the green bridges is appropriate, particularly when considering the construction constraints of building a bridge over a live strategic network.</p> <p>Furthermore, 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. The amended principles will be submitted into Examination when the Design Principles are next updated.</p>
<p>GBC Response to Applicant's Comments</p>	<p>It is suggested that the two proposed green bridges across the widened A2 have the potential to provide a far greater contribution in mitigating the landscape and visual impacts of the Project than is currently proposed.</p>

The role of the new A2 bridges as ecological corridors has been recognised, linking areas of the SSSI north-south across the widened road corridor, and it is understood the detailed design of the bridges is under discussion with NE.

These green bridges are positioned at or near the points of entry to the KDAONB for users of the widened A2, and their role as landmarks and 'gateways' into the KDAONB has been acknowledged by the Applicant. **However, it is considered that the design of the green bridges will underplay their potential value and the important functions they need to perform.**

The green bridges across the A2 have the potential to provide landscape-scale connections across the widened road, helping to reduce the increased severance of the KDAONB. They could also provide a woodland screen to minimise the visual impacts of the Project.

The recreational role of the green bridges will be enhanced by the provision of dedicated routes for non-vehicular users, but the experience of those users will be greatly diminished by their exposure to the noise and visual intrusion of the widened road and the major road junction of the A2 and A122. It is suggested that the proposed design for the two green bridges will not provide the necessary width or depth to provide the vegetated screening needed in order to reduce the impacts of the Project on the bridge users and provide a landscape connection; screening is needed on both sides of the bridge, and to a width that will provide a visual barrier and assist in noise reduction.

The existing Thong Lane south bridge is located just west of the boundary of the KDAONB and Shorne Woods Country Park, and currently provides a link across the A2, enabling access between areas of countryside and open space facilities in the area. The proposed bridge will better accommodate walkers, cyclists and horse-riders, with a dedicated route, separated from vehicular traffic.

The recreational use of the new green bridge is likely to increase as a result of the enhancements to its provision for recreational users, but also as a result of the proposed car park at Thong Lane, to be located close to the north side of the new green bridge. The car park was initially located closer to Thong Village, but has been relocated further south, and closer to Thong Lane south green bridge. The car park will provide visitors with direct access into Shorne Woods Country Park, and enable exploration of the cluster of countryside facilities nearby and on both sides of the widened A2. The car park will provide much-needed additional car parking space for the country park - as its other car parks are often at capacity - and will be designed to attract cyclists and equestrian visitors (ref [REP1-181](#) 9.8 Environmental Statement Addendum Appendix A) It is understood that the detailed design of the car park and its facilities is under discussion between the relevant parties. In addition, the green bridge will be the nearest crossing point of the widened A2 for visitors to the KDAONB from Gravesend and other areas to the west, including London.

	<p>However, the Thong Lane south green bridge is located just to the east of - and very close to - the new road junction (A2/A122), meaning that users of the green bridge will be exposed to the noise and visual impact of this multi-layered junction and its linking roads, and lanes of traffic running under the bridge. Unfortunately, there are no visual materials provided to illustrate the view from the green bridge towards the new road junction. It is suggested that the proposed 1.5m width of screening vegetation on the eastern side of the bridge will be insufficient to mitigate the impacts on the bridge users; similarly with the Brewer's Road green bridge, where the planting proposed on the western side of the bridge is only 1.5m wide.</p> <p>The design of the two green bridges over the A2 is considered to be a failed opportunity to mitigate some of the negative impacts of the Project, provide landmark structures at the boundaries of the KDAONB, make landscape connections to reduce severance, and provide a better experience for recreational users crossing the route.</p> <p><b>The two green bridges over the widened A2 provide the only means of achieving these key functions, and it is suggested that, for these reasons, they should be considered as exemplars and Project Enhanced Structures.</b></p> <p>In justification of the proposed design of the green bridges, the Applicant has quoted from the Landscape Institute and Natural England guidance on green bridges (Green Bridges, Technical Guidance Note 09/2015 (Landscape Institute, 2015) and Green Bridges, A Literature Review (Natural England, 2015)). However, the same guidance also states '<i>Bridges with aims to achieve connections at a landscape/ ecosystem level should be over 80m in width. Bridges which aim to achieve connections for species at a population level should be around 50m (published guidance recommendations range from 25m-80m, with an average of 50m). Bridges below 20m in width are not recommended as frequency of use has been found to be lower. A width to length ratio over 0.8 is recommended.</i>'</p> <p>It is interesting to note that the proposed Thong Lane north green bridge, which is located on the Project route, spanning the A122 and is located away from the noise and visual instruction of the main junction, is a Project Enhanced Structure, and designed to a higher standard than the bridges over the widened A2.</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Widened A2 road corridor: Our comments. Paragraphs 7.15.5 (i) to (iv)</p>	<p>The proposed A2 corridor would cut a wide swathe through the KDAONB between the A2/M2 junction in the east and the new A2/A122 junction in the west. The expanse of up to 16 lanes of traffic and hard surfacing, would be unrelieved by the softening effect of vegetation. The landscape and visual impact of the proposed road corridor would be magnified by the loss of the important wooded central reservation, which currently helps reduce the effect of the road in this part of the KDAONB, and emphasises the sense of enclosure.</p> <p>The loss of the wooded central reservation appears to be understated in the LVIA, and its contribution to the landscape and visual amenity undervalued. It is a key component of the landscape in this area. This largely wooded strip is understood to be a remnant of the Cobham landscape woodland to the south, which was cut-off from the woodland to the south by the early widening of the A2.</p>

	<p>In addition, in order to accommodate the width of the widened A2 and its link roads, existing woodland planting on both the north and south sides of the A2 would be removed together with screening vegetation along the northern boundary of HS1. This would result in a significant increase in real and perceived severance of the KDAONB between Cobham Hall Registered Park and Garden and Shorne Woods Country Park, and the introduction of a new level of urbanisation to this corridor. The urbanising effect would be increased by gantries and other structures of a far greater scale and mass than are currently found, and would result in a permanent change to landscape character.</p> <p>The proposal documents suggest that the effects of the project would be contained by surrounding woodland. However, it would not be possible for adjacent woodland to contain the scale and mass of the project and the significantly increased width of unrelieved hard surfacing. The retention of open areas for utilities will exacerbate the apparent width and visibility of the road. Even at maturity, the proposed mitigation planting would not be able to reinstate the landscape character.</p>
Applicant's Response	<p>Landscape and visual effects associated with the M2/A2 widening are assessed in ES Appendix 7.9: Schedule of Landscape Effects [APP-384], and ES Appendix 7.10: Schedule of Visual Effects [APP-385]. This includes effects associated with the loss of existing vegetation. For example, the visual impact assessment for Representative Viewpoint S-05 during construction makes reference to <i>'Substantial mature vegetation loss within the central reservation and adjacent to the westbound carriageway associated with the widening and realignment works along the A2 corridor, as well as some vegetation removal along the eastbound carriageway...'</i></p> <p>The landscape and visual impact assessment acknowledges the permanent loss of vegetation along the M2/A2 corridor. For example, ES Appendix 7.9 discusses landscape character effects on the West Kent Downs (sub area Shorne) LLCA during design year, referencing the <i>'permanent loss of trees and woodland, including within the former central reservation'</i> and the <i>'continued perceived increase in the prominence and scale of the A2 corridor along the southern margin of the LLCA'</i>. Effects have been assessed as moderate adverse and therefore significant.</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 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 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 to 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>Retained mature woodland on both sides of the widened M2/A2 corridor (in Shorne Woods Country Park and Brewers</p>

	<p>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 provide effective visual enclosure of the Project from the surrounding landscape, thereby limiting most landscape and visual effects to the immediate road corridor.</p> <p>Mitigation planting to replace vegetation removed during construction along the M2/A2 corridor has had regard to the minimum offsets to each retained and diverted utility required by the relevant Statutory Undertaker and/or Network Operator. Minimum offsets are required to avoid future tree root damage to utility assets and to allow for future maintenance access. However, a mix of intermittent trees and shrubs has been proposed over the top of utility corridors to soften the alignments where practicable, with the intention at detailed design to locate trees and larger shrubs in accordance with required offsets.</p>
<p>GBC Response to Applicant's Comments</p>	<p>The Applicant's comments are noted. However, in our opinion the increased perception of severance of the KDAONB will not substantially reduce by the Design Year, as the Applicant suggests; and even if the perception does reduce when compared to Construction or Opening Year, the width and design of the road corridor and absence of vegetation will ensure that <b>the real and perceived severance will be very apparent and will persist.</b></p> <p><b>It is clear that the only way the road design could be accommodated into the transport corridor would be to exclude as much non-functioning infrastructure as possible</b>, i.e. vegetation that might soften and reduce the impact of the road in this sensitive landscape.</p> <p>See also comments on the realigning of the LLCA boundaries along the M2/A2 by the Applicant (ref Paragraph 7.6.6)  See also GBC comments on Green Bridges (ref Paragraphs 7.15.3 (i) to (viii) (with additional text in paragraphs 7.15.1 (xiii), 7.16.3.3 (iv a, b and c))  See also GBC comments on mitigation planting (ref Paragraphs 7.14.4 (vi) to (xi))</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Junction of the A2 and the A122: Our comments. Paragraph 7.15.6 (i)</p>	<p>The widened A2 corridor would continue to the west where, just beyond the boundary of the KDAONB, it would be punctuated by the proposed A2/A122 road junction. The impact of the proposed junction has been difficult to interpret, as there has been a lack of visual imagery provided. However, it is clear that the junction would introduce a number of levels of carriageway, in cuttings and flyovers, and would introduce significant new urbanising elements into the setting of the KDAONB. This is of particular concern when considered together with the increase in severance of the KDAONB, with its increased urbanisation and opening-up of the landscape along the A2 transport corridor.</p>
<p>Applicant's Response</p>	<p>A preliminary selection of landscape cross-sections have been shared with Gravesham Borough Council (via email on 12 May 2023), showing the scale of the M2/A2/A122 Lower Thames Crossing junction in the landscape.  A further series of landscape cross sections showing the size, height and mass of the M2/A2/A122 Lower Thames</p>

	<p>Crossing junction and associated road infrastructure will be submitted at Deadline 2, in conjunction with engineering cross sections requested by the Examining Authority.</p> <p>Other visual images illustrating the M2/A2/A122 Lower Thames Crossing junction is provided in Section 5 of the Project Design Report Part D: General Design South of the River [APP-509]; photomontage S-22 in ES Figure 7.19: Photomontages - Winter Year 1 and Summer Year 15 (1 of 4) [APP-244]; and in photomontages S-25 and S-28 in ES Figure 7.19: Photomontages - Winter Year 1 and Summer Year 15 (2 of 4) [APP-245].</p> <p>Landscape and visual effects associated with the M2/A2/A122 Lower Thames Crossing junction on the setting of the Kent Downs AONB are assessed in ES Appendix 7.9: Schedule of Landscape Effects [APP-384], and ES Appendix 7.10: Schedule of Visual Effects [APP-385]. Effects would be most apparent during construction, due to vegetation clearance and construction of the large-scale M2/A2/A122 Lower Thames Crossing junction. However, by the design year, these effects would be substantially reduced due to the establishment of extensive woodland planting at the proposed junction, which would be in keeping with the adjoining wooded character of the AONB. There would be few locations within the AONB where the new junction would be visible.</p> <p>As all but the very eastern edge of the M2/A2/A122 Lower Thames Crossing junction lies outside the Kent Downs AONB, the issue of severance (discussed in relation to the above paragraphs 7.15.5 (i) to (iv)) does not apply.</p>
<p>GBC Response to Applicant's Comments</p>	<p>The sections received in May 2023 were of insufficient detail to assist in better understanding the complexity, scale, mass and overall impact of the proposed road junction, its associated infrastructure and linking roads.</p> <p>See also response to comments ref Paragraph 7.16.1 (i) below.</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Park Pale area: Our comments. Paragraphs 7.15.7 (ii) and (iii)</p>	<p>This area is of particular concern due to the number of individual activities proposed, and likely changes to the area as a result. These include:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The proposed access route around the northern boundary of the Harlex compound, including access arrangements to Harlex. These changes would result in encroachment into a currently undeveloped part of the AONB which has high landscape character and value, resulting in urbanising effects to the AONB;</li> <li><input type="checkbox"/> The proposed attenuation basin (works) and maintenance access to the east of the Harlex compound;</li> <li><input type="checkbox"/> Utilities works along the A2/M2, ULW16 and gas main works;</li> <li><input type="checkbox"/> The removal of trees and (screening) vegetation from areas north of the Harlex area, from both sides of the existing A2, from the central reservation of the A2, from across the transport corridor and its link roads with the Wainscott Bypass, and from HS1;</li> <li><input type="checkbox"/> Widened roadways, and increased number of lanes, unrelieved by planting;</li> <li><input type="checkbox"/> Greater visibility of HS1 in the medium-term</li> </ul> <p>All the above will exacerbate the severance of the KDAONB and introducing a significantly more urban character to this area (of the KDAONB)</p>

<p>Applicant's Response</p>	<p>Landscape and visual effects associated with the Project in the Park Pale area are assessed in ES Appendix 7.9: Schedule of Landscape Effects [APP-384], and ES Appendix 7.10: Schedule of Visual Effects [APP-385].</p> <p>ES Appendix 7.9 discusses landscape character effects on the West Kent Downs (sub area Shorne) LLCA in the Park Pale area, including those in relation to vegetation loss, M2/A2 widening works, the attenuation pond and proposed utilities. ES Appendix 7.10 discusses visual effects in the Park Pale area at Representative Viewpoints S-03, S-04, S-05 and S-05a.</p> <p>The baseline view descriptions for Representative Viewpoints S-03, S-04, S-05 and S-05a within ES Appendix 7.7: Representative Viewpoint and Visual Receptor Baseline Descriptions and Visual Sensitivity [APP-382] note existing visibility of the A2 corridor and, where applicable, the HS1 corridor. The baseline photo at Representative Viewpoint S-03 within ES Figure 7.17: Representative Viewpoints - Winter and Summer Views (1 of 8) [APP-235] shows existing visibility of the A2 and HS1 corridors and buildings at Harlex Haulage.</p> <p>The M2/A2 widening works would take place along the existing road corridor, and the new attenuation pond and access tracks would be seen in the context of existing buildings at Harlex Haulage and/or the slip road at M2 junction 1. In the opening year, vegetation removal in this area would increase visibility of the A2 and HS1 corridors to a degree. However, vegetation would be retained to the north of Harlex Haulage and Park Pale, within the field north of Park Pale, at Brewers Wood, south of the HS1 corridor, and at M2 junction 1, as shown on ES Figure 7.24: Tree Removal and Retention Plan [APP-261], thereby helping to soften the appearance of the widened M2/A2 corridor, new and replacement highway infrastructure, the attenuation pond, and access tracks from within the surrounding landscape. By the design year, established roadside tree and shrub belts and extensive areas of ancient woodland compensation planting would result in the widened M2/A2 corridor, new and replacement highway infrastructure, the attenuation pond and access tracks being largely screened from within the surrounding landscape.</p> <p>Refer to response above to paragraphs 7.15.5 (i) to (iv) regarding severance within the Kent Downs AONB.</p>
<p>GBC Response to Applicant's Comments</p>	<p>In addition to our previous concerns, we disagree with the Applicant's assessment of the situation outlined in their comments, as follows:</p> <ul style="list-style-type: none"> <li>• At present from this view the A2 corridor is almost entirely screened by vegetation.</li> <li>• HS1, despite being elevated, is only visible when a train goes past due to maturing vegetation on the embankment.</li> <li>• The Harlex Depot is partially screened in Summer, less so in Winter.</li> <li>• Views are currently across grassland to the woodland to the south beyond, with views possible of the top of the Darnley Mausoleum.</li> <li>• The Project will open up views of the haulage yard.</li> <li>• The elevated viewpoint (S-03) means the works will be highly visible.</li> <li>• We have previously stated our opinion of the result of the removal of vegetation from across a range of areas within the view.</li> </ul>



	<ul style="list-style-type: none"> <li>We are of the opinion that the totality of effects has not been considered and the overall effects have been underassessed.</li> </ul>
<p>LIR Appendix 7a Landscape &amp; Visual – Park Pale area: Our comments. Paragraph 7.15.7 (iv) (with additional text in paragraph 7.15.4)</p>	<p>The extensive works and disruption to this area will change the landscape and the visual amenity of the area. As a result the experience for recreational users crossing the Park Pale bridge across the widened A2 road corridor will be very unpleasant, even after the completion of the project. However, the bridge provides a useful link across the KDAONB to areas of countryside beyond. Document 7.4 Project Design Report Part E Page 13 provides an aerial image of the proposed access routes in the Park Pale area, and shows the bridge to be important to the access network. The LTC scheme could provide opportunities to improve the experience for recreational users of the KDAONB by developing Park Pale overbridge into a green bridge. This would provide habitat connectivity and enhance the experience of recreational users crossing the A2. It would help to screen views of the Project but retain long views to the north and east. The overbridge connects a public Right of Way from the higher slopes of the Kent Downs to the north of the bridge, across the A2 and under an existing tunnel beneath HS2. It is understood there are technical issues preventing the Brewers Road Green Bridge from being developed into a more substantial – and better functioning – landscape and ecological corridor. As a result the functionality of that bridge is limited, as is its role in acting as a gateway into the KDAONB. But the addition of a green bridge at Park Pale would provide improved ecological, landscape and recreational connectivity across the widened A2.</p>
<p>Applicant's Response</p>	<p>The Applicant does not consider that there is a robust justification to deliver a green bridge at Park Pale. 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>GBC Response to Applicant's Comments</p>	<p>If the proposal for a green bridge at Park Pale is not taken forward, then consideration should be given to improving and enhancing the Brewer's Road green bridge, to ensure it is able to perform its functions as a gateway into the KDAONB, an ecological corridor, a landscape connector, and important connecting route for walkers, cyclists and horse-riders (see also response to Green Bridges above)</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Area east of Thong Village. Paragraph 7.15.8 (iii)</p>	<p>The open character of the site should be conserved, allowing for a gradation of woodland from the boundary formed by Shorne Woods Country Park to scrub and grassland, retaining an open aspect closer to Thong Village. The proposed Open mosaic habitat would retain the open character of this site, but may not be the optimal use for former agricultural land and should not result in the introduction of PFA (pulverised fuel ash), as listed in the proposals (LTC document 6.7 oLEMP 8.22.5 and 8.22.7d). In addition, ecological ponds should be sited at the base of slopes, where they will appear more natural in the landscape.</p>
<p>Applicant's Response</p>	<p>The open character of the site east of Thong village would be conserved in accordance with Clause S2.01 Wooded circle around Thong in the Design Principles [<a href="#">APP-516</a>].</p>

	<p>The oLEMP [REP1-173] contains broad outline requirements for all areas of open mosaic habitat, which can include the use of inert material such as Pulverised Fuel Ash. However, each site of open mosaic would be subject to detailed design and be informed by the material available to create the habitat required.</p> <p>The ecological ponds are shown on ES Figure 2.4: Environmental Masterplan Section 2 (2 of 10) [APP-160] as an indicative symbol only. The design of the ecological ponds would be subject to detailed design and would be located and sized appropriately within the land parcel identified, subject to local site condition and appropriateness within the landscape.</p> <p>The Applicant is developing 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 would deliver the required objectives. The Applicant has engaged with, and will continue to engage with, relevant stakeholders in developing that process. The detailed design process would be a consistent and accessible process and include documentation for all environmental designs. The detailed design process would be phased to develop a framework of consistent principles to design within across the Project; consider options and make decisions on outcomes and success criteria for each key site; and develop detailed prescription to achieve the objectives.</p>
GBC Response to Applicant's Comments	The Applicant's comments are noted. (See also response by GBC to LIR Applicant's Response re Cultural Heritage)
LIR Appendix 7a Landscape & Visual – Chalk Park and the Southern Tunnel Portal. Paragraph 7.15.9 (vi, a)	The benefits of this area for local people as an amenity resource are to be welcomed. However, the local authority and other stakeholders should be closely involved, to ensure that the open space provision is meeting local needs and/or deficiencies, and to inform the design of the park and its facilities.
Applicant's Response	As noted in paragraph 4.1.13 of the oLEMP [REP1-173], local planning authorities such as Gravesham Borough Council would be part of the advisory group for development of the LEMP. In addition, Gravesham Borough Council are listed in Table 2.1 of the oLEMP and would therefore be consulted on the detailed LEMP, which would include details of hard and soft landscaping works, as stated in Requirement 5 of the draft DCO [REP1-042].
GBC Response to Applicant's Comments	Ref Q13.1.10 – With regard to the proposed Chalk Park, the ExA has requested Gravesham Borough Council to clarify the correct position on open space provision for Gravesend and Chalk in light of their own published assessment.

<p>LIR Appendix 7a Landscape &amp; Visual – Chalk Park and the Southern Tunnel Portal. Paragraph 7.15.9 (vi, b)</p>	<p>It is understood that the wooded hilltop will be 13m to 17m above the existing ground level. The purpose of this feature is not clear. The hilltop would appear alien in this gently undulating landscape, and would interrupt long views across the open landscape.</p>
<p>Applicant's Response</p>	<p>The proposed wooded hilltop landform at Chalk Park would provide a variety of mitigation functions, one of which is to help integrate the infrastructure of the South Portal into the surrounding landscape. It does this by utilising the excavated material from the South Portal approach road to replicate the character of the wooded hilltops in a manner characteristic of the nearby settlements of Thong and Shorne. The wooded hilltop landform would also provide elevated views of the Thames Estuary and surrounding landscape. This is reflected in Clause S3.04 of the Design Principles [APP-516].</p>
<p>GBC Response to Applicant's Comments</p>	<p>The inclusion of a hilltop in this landscape will be alien to the surrounding landscape, which is currently gently undulating and largely agricultural. The views out are extensive, including open views across the Green Belt, and to the north towards the River Thames and across to Essex.</p> <p>It is difficult to understand how a wooded hilltop landform can be considered to provide mitigation functions. The proposed south tunnel portal will introduce a mounded feature into the landscape, together with its associated infrastructure, but it is not clear how another alien landform will provide mitigation. The Project will insert a new road - largely in cutting - and a tunnel portal into the landscape. The proposed hilltop may have a role in utilising the spoil from the cutting and the tunnel, but this would not be a mitigation function.</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Chalk Park and the Southern Tunnel Portal. Paragraph 7.15.9 (vi, c)</p>	<p>The infiltration basins are engineered structures, and it is considered that they are unlikely to look 'naturalistic' in the open landscape</p>
<p>Applicant's Response</p>	<p>Infiltration basins and retention ponds are subject to detailed design and Clause LSP.17 within the Design Principles [APP-516]. Clause LSP.17 states that: <i>'Infiltration basins and retention ponds shall not appear utilitarian or urban and shall be designed to appear as</i></p>

	<p><i>naturalistic elements within the wider setting, that take account of existing topography, gradients and field boundaries. Planting shall be provided to soften edges where this is appropriate to the context. The drainage design shall incorporate Sustainable Drainage Systems (SuDS) that provide for runoff treatment and reduce the risk of flooding in local catchments by providing storage and attenuation. Attenuation features are shown on the Environmental Masterplan (6.2, Figure 2.4) and the Works Plans (2.6). Where this attenuation is provided via retention and infiltration basins, the basins shall be designed to appear as naturalistic elements within the wider setting, with planting provided to soften edges where this is appropriate. Conveyance of runoff would be by means of drainage ditches and pipes, and drainage ditches would be used wherever practicable’.</i></p>
<p>GBC Response to Applicant’s Comments</p>	<p>The Applicant’s comments are noted.</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Photomontages. Paragraph 7.16.1 (i)</p>	<p>The photomontages provided to support the LVIA are useful in conveying the likely appearance of the landscape after the proposal is developed, at Operation and at Design Year (15 years after opening) However, there are a number of areas where photomontages are missing, and are needed to help illustrate the changes to the landscape and to visual amenity that will arise as a result of the proposal. Notably photomontages are needed from:</p> <ul style="list-style-type: none"> <li>a. Viewpoints that will show the proposed junction of the A2 and A122. Photomontages taken from the new Thong Lane South Green Bridge looking west for example, would illustrate the different ground levels, flyover carriageways, and the height and mass of retaining walls and other infrastructure associated with the new junction and its linking roads.</li> <li>b. The area just north of Park Pale (at RVP S-03) on elevated ground on footpath NS161, looking south, would help visualise the potential effects of the proposal at all stages, and the effect of Ancient Woodland mitigation planting on important views.</li> <li>c. RVP S-08 to better understand the ‘slight adverse’ effect identified at Design Year, including the effects of removing vegetation between the existing A2 and HS1;</li> <li>d. RVP S-23 to show the extent of change to the view in this area which will help in appraising the LVIA and the View from the Road Assessment.</li> </ul>

<p>Applicant's Response</p>	<p>Photomontage locations were agreed with Gravesham Borough Council on a joint site walk over on 19 June 2019, as stated in Table 7.2 of ES Chapter 7: Landscape and Visual [APP-145].</p> <p>M2/A2/A122 Lower Thames Crossing junction – The location of the new Thong Lane green bridge south would be slightly further west of the existing Thong Lane overbridge and with a different orientation crossing the M2/A2. Baseline photography could therefore not be obtained to portray potential views towards the M2/A2/A122 Lower Thames Crossing junction from the new Thong Lane green bridge south.</p> <p>Representative Viewpoint S-03 – On completion of construction, the modified A2 corridor would be perceptibly more visible from Representative Viewpoint S-03, with slightly less enclosure as a result of vegetation removal. As views from this location were not anticipated to be notably different to existing, it was considered that a photomontage view from the nearby Park Pale bridge would more effectively illustrate the change in views along the A2 corridor. Effects at Representative Viewpoint S-03 have been assessed as beneficial at design year due to established ancient woodland compensation planting shown on ES Figure 2.4: Environmental Masterplan Sections 1 &amp; 1A (1 of 10) [APP-159], with existing views towards the Darnley Mausoleum secured through Clause S1.08 of the Design Principles [APP-516].</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 footpath NS179. 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-23 – National Cycle Network route 177 would be permanently closed at Representative Viewpoint S-23. Publicly accessible views from this location would therefore not exist once construction for the Project begins.</p>
<p>GBC Response to Applicant's Comments</p>	<p>The agreement with Gravesham Borough Council (GBC) on the locations of photomontages was taken in 2019, and some time before the design of the Project was finalised.</p> <p>GBC has been requesting visual imagery – in particular of the proposed main junction of the A2 and A122 - for some time.</p> <p>We are grateful to the Applicant for their clarification regarding RVPs S-08 and S-23.</p> <p>However, we consider the relocation of the new Thong Lane green bridge south would not be so great as to prevent an estimation of the view (and a photomontage), as it will be on a very similar alignment to the existing bridge. The bridge proposal in this location provides an opportunity for the Applicant to show visual images from the new bridge looking west, towards the</p>

	<p>main junction. This is a key viewpoint for walkers, cyclists and horse-riders, using the bridge to connect the countryside on either side of the widened A2. It is important that the junction and its infrastructure are clearly shown, so that the effects on the users of the bridge can be better understood.</p> <p>A photomontage from Representative Viewpoint S03, looking south, would help to describe the effects of the Project, and the scale of the removed vegetation (from both sides of the A2/M2, the central reservation, areas adjacent to the Harlex compound, as a result of utilities works and other areas surrounding the widened road and HS1) This is an important viewpoint from the KDAONB, and the change in the landscape to the south of this viewpoint will be significant.</p>
<p>LIR Appendix 7a Landscape &amp; Visual – Other visual information. Paragraph 7.16.2 (iii) (with additional text in paragraphs 7.15.6 (ii) to (iv))</p>	<p>Improved visual imagery has been requested previously, in particular, 3D modelling, but to date the visual imagery provided has failed to adequately convey the proposals in sufficient detail and in appropriate context, such that the effects of the proposal can be understood and assessed. The structures, elevated carriageways and cuttings proposed for the A2/A122 junction are a particular concern, as are the structures along the widened A2 at Park Pale and where the A2 meets Thong Lane.</p>
<p>Applicant's Response</p>	<p>Detailed 3D fly-through visualisations of the entire Project route, including the M2/A2/A122 Lower Thames Crossing junction have been made available for public consultations and during the DCO pre-examination stage. These flythrough visualisations illustrate the design of the A122 Lower Thames Crossing project, 15 years after road opening, and are accessible on the Applicant's website and public YouTube channel.</p> <p>Refer also to response above to paragraph 7.15.6 (i) regarding visual imagery.</p> <p>Cross-sections of the A2/M2/LTC junction were provided to Gravesham Borough Council on 15 May 2023.</p>
<p>GBC Response to Applicant's Comments</p>	<p>As stated in our response ref Paragraph 7.16.1 (i) Gravesham Borough Council has been requesting visual imagery – in particular 3D modelling and detailed sections of the proposed main junction of the A2 and A122 - for some time.</p> <p>The sections received in May 2023 were of insufficient detail to assist in better understanding the complexity, scale, mass and overall impact of the proposed road junction, its associated infrastructure and linking roads.</p>

	<p>(Also included in our comments on the Applicant's response re Paragraph 7.13.5) GBC has seen a draft version of sections across the junction, and these clearly show the scale and extent of the proposed changes to the landscape. We consider it important that the finalised versions of these visuals be made available, in order that the full extent of visual and other effects may be better considered, and to inform this assessment.</p>
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