

Appendix 7 Landscape and Visual

7.1 Introduction

- 7.1.1 This element of the LIR deals with the critical area of Landscape. The key documents is: [APP- 143](#) 6.2 Chapter 7 ES Landscape and Visual.
- 7.1.2 It has been prepared for the Borough Council by Val Hyland of Val Hyland Associates. She has long experience in working in this area.

7.2 Landscape and Visual

- 7.2.1 This report deals with the effects of the proposed development on the landscape and its visual effects. In particular it deals with the effects on landscape character and the effects on visual receptors.
- 7.2.3 As the Proposed Development within the Gravesham area is located wholly within - or within the setting of - the Kent Downs Area of Outstanding Natural Beauty (KDAONB), this report also addresses development within a nationally designated area.

7.3 The Project

- 7.3.1 The applicant has set out their assessment of the likely effects of the A122 Lower Thames Crossing project on the landscape resource and on visual receptors during construction and operation.
- 7.3.2 Environmental commitments relevant to landscape and visual amenity are set out ([APP-145](#) 6.1 ES Chapter Section 7.5) in the form of embedded mitigation, good practice, and essential mitigation.
- 7.3.4 Embedded mitigation measures form part of the engineering design – included in document [APP-516](#) 7.5 Design Principles and as features in document [APP-159](#), [APP-160](#), [APP-161](#) & [APP-162](#) 6.2 Figure 2.4 Environmental Masterplan.
- 7.3.5 Good practice methods to avoid or reduce environmental impacts – included in [APP-336](#) Document 6.3 Appendix 2.2: Code of Construction Practice (CoCP) Register of Environmental Actions and Commitments (REAC).
- 7.3.6 Essential mitigation measures are in addition to the above, and designed to avoid, reduce or offset impacts.

7.4 Methodology and assumptions

- 1.1. Nationally recognised sources of standards and guidance have been used to inform the assessment. However, there appear to be some inconsistencies between the 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.

- 7.4.1 There are other differences between the 2020 and 2022 versions of project documents – see section 7.11 in this report.

7.5 Policy

- 7.5.1 The application site lies within the KDAONB and its setting. The building of new roads in AONBs is subject to the NPSNN (paragraphs 5.150 to 5.153) test of ‘exceptional circumstances’, and the presumption against the building of new roads or significant widening of existing roads unless there are compelling reasons for the proposed development, and with any benefits outweighing the costs very significantly.
- 7.5.2 Paragraph 5.151 of the NPSNN says the Secretary of State should refuse development consent in these areas except in exceptional circumstances and where it can be demonstrated that it is in the public interest. Consideration of such applications should include an assessment of:
- the need for the development, including in terms of any national considerations, and the impact of consenting, or not consenting it, upon the local economy;
 - the cost of, and scope for, developing elsewhere, outside the designated area, or meeting the need for it in some other way; and
 - any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.
- 7.5.3 Paragraph 5.152 says there is a strong presumption against the building of new roads or significant widening of existing roads in Areas of Outstanding Natural Beauty, unless it can be shown there are compelling reasons for the new capacity and with any benefits outweighing the costs very significantly. Planning of the Strategic Road Network should encourage routes that avoid National Parks, the Broads and Areas of Outstanding Natural Beauty
- 7.5.4 Further, NPSNN paragraph 5.154 considers developments outside nationally designated areas which might affect them, and states:
- ‘The duty to have regard to the purposes of nationally designated areas also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. The aim should be to avoid compromising the purposes of designation and such projects should be designed sensitively given the various siting, operational, and other relevant constraints. This should include projects in England which may have impacts on designated areas in Wales or on National Scenic Areas in Scotland.’*
- 7.5.5 In addition, the NSPNN requires applicants of proposed road developments to take account of the effect on land in the Green Belt. Paragraph 5.170 states the general presumption against inappropriate development in the Green Belt.

7.6 Methodology of Assessment

- 7.6.1 The applicant follows the assessment methodology set out in the Design Manual for Roads and Bridges (DMRB) LA 107 Landscape and Visual Effects (Highways England, 2020a) (see also comment above)

7.6.2 A study area was determined, extending up to 5km from the Project road, according to the likely visual influence of the Project within the surrounding landscape. The study area was used for the assessment of significant effects for the landscape and visual impact assessment in APP- 143 6.2 Chapter 7 ES Landscape and Visual.

7.6.3 **Landscape Baseline conditions**

- (i) The applicant has set out the baseline conditions, including reference to the special qualities of the KDAONB. The assessment is based on landscape character types: National Character Areas (NCAs) and Local Landscape Character Areas (LLCAs).
- (ii) The applicant has assigned a Value to each of the Character Areas ('Landscape Receptors') based on their habitat diversity, recreational value, perceptual aspects and rarity. The Value is combined with the applicant's assessment of Susceptibility of each Landscape Receptor to the likely changes that will arise from the proposal. The combination of these two factors has been taken forward to provide an assessment of Sensitivity of the Landscape Receptor, which has then contributed to the overall assessment.
- (iii) Natural England produces NCA profiles for each NCA. These profiles include descriptions, key features, Statement of Environmental Opportunity, drivers of change - which include climate change, agricultural change, development pressures and their potential challenges – designations and assets. NCAs of relevance to the Gravesham area include:
 - a. NCA 119: North Downs – the description in the NCA profile includes: a chain of chalk hills dissected by valleys, and includes the KDAONB. The escarpment forms a defining feature, and panoramic views. The overall value of NCA 119: North Downs is judged as High. The Susceptibility is judged as Medium.
 - b. NCA 113: North Kent Plain – the description in the NCA profile includes: the strip of land between the Thames Estuary to the north and the chalk of the Kent Downs to the south. It is largely low-lying and gently undulating agricultural land, and open apart from ancient woodland blocks including those within Shorne Woods Country Park. The overall value of NCA 113: North Kent Plain is judged as High. The Susceptibility is judged as Medium.
 - c. NCA 81: Greater Thames Estuary – the description in the NCA profile includes: a low-lying area that encompasses the coastline of North Kent along with a narrow strip of land following the path of the Thames. In Gravesham, the NCA includes the Shorne and Higham Marshes SSSI and Ramsar site, and Shornemead Fort. The overall value of NCA 81: Greater Thames Estuary is judged as Medium. The Susceptibility is judged as Low.
- (iv) Our response: We agree with the assessment of Value and Susceptibility of the NCAs as set out above.
- (v) A number of Local Landscape Character Areas (LLCAs) are included within the Gravesham area of the proposal, south of the River Thames, within the area of search defined by the project.

The LLCAs within the KDAONB comprise:

- West Kent Downs (sub area Cobham)

- West Kent Downs (sub area Shorne)
- West Kent Downs LCA 1A (overview of the sub areas)
- The LLCAs within the setting of the KDAONB comprise:
 - Higham Arable Farmland (sub area Gadshill)
 - Shorne Wooded Slopes
 - Higham Arable Farmland (sub area Thong)
 - Istead Arable Farmlands
 - Gravesend Southern Fringe
 - Higham Arable Farmland (sub area Chalk)
 - Shorne and Higham Marshes
- (vi) Table 7.1 sets out the response to the assessment of Sensitivity and the assessment of landscape effects on the above NCAs and LLCAs.

7.6.4 **Kent Downs AONB setting**

- (i) The areas of proposed development and its effects that are outside of the AONB are considered to be within the setting of the AONB.
- (ii) The Gravesham section of the LTC proposal comprises areas to the northern extent of the Kent Downs AONB and its setting, including an area of Green Belt land to the immediate east of the Gravesend conurbation. The extent of setting of the KDAONB is not formally defined on a map, but for the purposes of this LVIA it includes the Local Landscape Character Areas (LLCAs) listed in the proposal documents within Gravesham Borough.
- (iii) Doc 6.1 Ch 7 (Landscape and Visual) section 7.4.35 states: *‘For the purposes of this landscape and visual assessment, LLCAs within the study area that make up a notable proportion of views from the AONB, as well as LLCAs that have key views towards the upland, wooded areas within the AONB, have been considered part of the AONB setting.’* See also Doc 6.3 ES Appx 7.6 KDAONB Relevant Guidance – Section 2.2 – Extracts from the KDAONB Setting Position Statement.
- (iv) The KDAONB Management Plan 2021-2026 lists the degradation of the setting of the AONB through development and infrastructure as a potential threat to landscape character (ref Kent Downs Area of Outstanding Natural Beauty Draft Management Plan 2021-2026 Section 4.4)

7.6.5 **Susceptibility of LLCAs**

- (i) The Susceptibility of the LLCAs within the KDAONB is judged to be either ‘Medium’ or ‘High.’ LTC document 6.3 Appendix 7.2 of the Environmental Statement provides descriptors for Susceptibility. The assessment of effects is built in stages, and Susceptibility is a key component. Accordingly the lower levels of Susceptibility will have affected the subsequent assessment of effects.
- (ii) Our response: 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 changes in the assessment since 2020.

7.6.6 **LLCA boundaries**

- (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.
- (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).

7.7 **Assessment of landscape effects**

- 7.7.1 It is noted that the assessments of effects on landscape have been amended - and mostly reduced - in terms of negative effects. It is understood that since the 2020 documents were produced, Nitrogen Deposition Compensation (NDep) sites have been added, and other minor changes made e.g. the removal of noise barriers in some locations. However, the susceptibility of the receptor and the value of the landscape have not changed since 2020, and the guidance provided remains the same, so it is unclear what the reasons might be to justify this change in assessment ratings. This change is of concern, as it has resulted (mostly) in the reduction of significance of effects on the landscape as a result of the proposed development. Notably, the effects on the West Kent Downs (sub-area Cobham) landscape have reduced from 'significant' to 'not significant'. Effects at Moderate or above are considered to be significant and material in the decision-making process, whereas those below Moderate are not. So the downgrading of assessment ratings is considered a critical issue.
- 7.7.2 Our response: 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.
- 7.7.3 **During Construction phase:** The applicant's assessment indicates significant effects to the West Kent Downs LLCA overall, and to Higham Arable Farmland (sub area Thong and sub area Chalk) LLCA, and Istead Arable Farmlands LLCA, within the setting of the KDAONB including the Green Belt.
- 7.7.4 Our response: With the exceptions of West Kent Downs (sub-area Cobham) LLCA and Gravesend Southern Fringe LLCA (see Table 7.1 for details) where it is considered the significance of effects are underassessed, the applicant's assessment of significance of landscape effects during Construction is agreed.
- 7.7.5 **At Opening Year:** The assessment for West Kent Downs LLCA overall is significant, and in the setting of the KDAONB including the Green Belt three LLCAs are assessed as having significant adverse effects.

7.7.6 Our response:

- (i) It is considered that although the assessment for the West Kent Downs LLCA is significant, the effects on the sub area of Cobham are underassessed, and the developed project would continue to be at considerable variance with the character (see Table 7.1 for details)
- (ii) 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.
- (iii) 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.
- (iv) Otherwise the applicant's assessment of significance of landscape effects for opening year is agreed.

7.7.7 **At Design Year (ie Year 15):** The effects on the West Kent Downs LLCA overall are assessed as adverse and significant; a residual effect will be permanent, due to the loss of wooded enclosure and increased prominence of the transport corridor and associated infrastructure. The effects on Higham Arable Farmland (Sub area Thong) are assessed as 'Large Adverse' and therefore significant.

7.7.8 Our response:

- (i) It is considered that although the assessment for the West Kent Downs LLCA overall is considered significant, the effects on the sub area of Cobham at Design Year are underassessed, and significant landscape effects would remain.
- (ii) In the WK Downs (sub-area Shorne) LLCA given the permanent and extensive nature of the effects on key aspects of this LLCA, a 'Large Adverse' effect would remain at Year 15 (Design Year)
- (iii) There would be a significant residual - and permanent - effect for the area around Thong. The proposed earthworks to the west of Thong Village Conservation Area would impact on the setting and result in a loss of historic agricultural character. Accordingly the assessment of a 'Large Adverse' significant effect is agreed.
- (iv) For the Shorne Wooded Slopes LLCA the project proposals rely on the screening effect of planting at 15 years, which we consider may be

overestimated. Therefore the significance at Design Year should be reconsidered as 'Neutral'.

7.7.9 Summary of landscape effects on the KDAONB

- (i) There would be significant tree loss. For example, loss of Ancient Woodland in Shorne Woods Country Park, and loss of woodlands within Shorne, Brewers and Ashenbank Woods, complete loss of trees from the central reservation of the A2, and loss of trees associated with HS1 mitigation planting. In addition there will be loss of trees in the setting of the KDAONB. The losses include Claylane Ancient Woodland and Gravelhill Wood. There will be further loss of mature woodland to the west along the A2 corridor;
- (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.
- (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;
- (iv) Replacement/mitigation planting which may be inappropriate for the setting;

Table 7.1 LVIA: Landscape Effects - Analysis and Comments

Landscape effects assessment - Analysis and Comments on LTC documents					
Landscape Receptor	Sensitivity	Magnitude of Effect & Significance (Construction)	Magnitude of Effect & Significance (Opening Year)	Magnitude of Effect & Significance (Design Year)	GBC response to the Assessment
NCAs					
119 North Downs	H	Min Adv => Slt Adv	Min Adv => Slt Adv	Neg => Slt Adv	
113 North Kent Plain	H	Mod Adv => Mod Adv	Mod Adv => Mod Adv	Min Adv => Slt Adv	
81 Greater Thames Estuary	M	Mod Adv => Mod Adv	Min Adv => Slt Adv	Min Adv => Slt Adv	
LLCAs					
West Kent Downs (Sub area Shorne)	Very High <i>(Same as 2020 documents)</i>	Major Adverse => V Large Adverse effect <i>(Same as 2020 documents)</i>	Moderate Adverse => Large adverse effect <i>(Same as 2020 documents)</i>	Minor adverse => Moderate adverse effect <i>(2020 docs state Moderate Adverse => Large Adverse)</i>	Agree Sensitivity assessment as ' Very High '. The main impacts are identified as being the modified and widened transport corridor, new earth works and retaining structures, absence of vegetation, greater severance of the landscape, plus beneficial Ancient Woodland compensation and nitrogen deposition sites. The assessment ratings are reported to be in part 'due to the localised nature of effects' – although the effects extend to over 2 km in length within this LCA. It is recognised that there would be a permanent reduction in tranquillity and while there would be replacement planting, this would not replace the mature woodland and trees lost as part of the project, and there would continue to be a permanent increase in the prominence and scale of the A2 corridor.

					<p>We agree that there would be a 'Major Adverse' magnitude of effect with 'Very Large Adverse' significance at Construction. However, we consider a 'Moderate Adverse' Magnitude would remain at Year 15 (Design Year), given the permanent and extensive nature of the effects on key aspects of this LLCA, (see also Design Year comments for West Kent Downs (sub area Cobham – below) and the 2020 reporting of the assessment (above). With 'Very High' Sensitivity and 'Moderate Adverse' Magnitude this should result in a 'Large Adverse' significant residual effect.</p>
<p>West Kent Downs (Sub area Cobham)</p>	<p>High <i>(2020 documents state Very High)</i></p>	<p>Minor Adverse => Moderate adverse <i>(2020 documents state Moderate adverse => Large adverse effect)</i></p>	<p>Negligible Adverse => Slight adverse effect <i>(2020 documents state Moderate Adverse => Large Adverse)</i></p>	<p>Negligible Adverse => Slight adverse effect <i>(2020 documents state Minor Adverse => Moderate Adverse)</i></p>	<p>There are a number of differences in the reporting of the landscape assessment in the 2020 documents compared with those in the most recent (2022) documents. The Sensitivity assessment is 'Very High' in the 2020 documents, but this is downgraded to 'High' in the 2022 documents. The condition of the landscape has not changed since the last version of the LVIA was produced (2020), so it is unclear as to how the assessment of Sensitivity can have changed. (See also comments on Susceptibility in West Kent Downs (overview) section below) (See also the comments on the source mapping of this LLCA boundary)</p> <p>The assessment (doc 6.3 Appendix 7.9 Table 1.3) states the presence of the A2 results in some ability of the landscape character area to accommodate the Project without substantial loss of overall integrity, giving it a 'Medium' rating for Susceptibility to specific change, but this justification is not applied to the Sub Area of Shorne (see above), and it does affect the Sensitivity rating.</p> <p>Also, it is of concern that each of the Magnitude assessments has been downgraded. The proposed development has not</p>

				<p>changed in terms of its scale, duration or reversibility (ie the factors which make up the Magnitude assessment), so we would question these assessment ratings.</p> <p>The assessment states that impacts would be largely limited to a small part of this LCA and largely be confined to the creation of NCN route along the public right of way. But it would also involve the loss of HS1 mitigation planting and the wooded central reservation, as well as greater severance of the AONB landscape along with the widened transport corridor and associated infrastructure such as retaining walls and large gantries. Replacement planting is to include 'shrubs with intermittent trees', but this would not be an adequate replacement for planting lost.</p> <p>Accordingly, we disagree with the assessment of magnitude of effects and significance of effects at all stages.</p> <p>At Construction: activities will be prominent; there would be a perceived qualitative change in the night time environment due to the increased activity and removed vegetation resulting in additional light spill and glow; overall during construction light sources would span a much broader area these notable against the Kent Downs AONB which is considered an intrinsically dark landscape; A more realistic assessment would be 'Moderate Adverse' Magnitude of effects at Construction, with 'Large Adverse' significance of effect;</p> <p>At Opening Year the loss of characteristic woodland features would damage the sense of place, the developed project would continue to be at considerable variance with the character, the infrastructure corridor will be much broader than before the development, additional and new light sources would be present at Thong Lane and on Thong Lane and Brewers Road green bridge, creating prominent night time feature; overall light</p>
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					<p>sources would span a much broader area; overall tranquillity would be noticeably impacted when in close proximity to the developed area, and HS1 would be more visible; a more realistic assessment of Magnitude of effects would be 'Moderate Adverse' and the significance of effects would be 'Large Adverse';</p> <p>At Year 15 (Design Year) we consider that the requirements of utility easements, the permanence of the broadened transport corridor, and the impact on woodland character would result in a significant effect, which should be assessed as 'Large Adverse'.</p>
<p>West Kent Downs (overview for Sub areas Shorne and Cobham)</p>	<p>Very High (Same as 2020 documents)</p>	<p>Moderate Adverse => Large Adverse effect (Same as 2020 documents)</p>	<p>Moderate Adverse => Large adverse effect (Same as 2020 documents)</p>	<p>Minor Adverse => Moderate Adverse effect (2020 Moderate Adverse => Large Adverse)</p>	<p>Agree with 'Very High' Sensitivity assessment.</p> <p>The documents appear to deal with the component sub-areas of this LLCA in differing ways regarding their Susceptibility to change. Doc 6.3 Appx 7.9 Table 1.3 re West Kent Downs (sub area Cobham) states: '<i>Due to the presence of the existing A2 corridor and HS1 along the northern boundary of this LLCA, the receptor has some ability to accommodate the Project without substantial loss of its overall integrity</i>'. However, the overview for West Kent Downs (including sub area Shorne) states: '<i>...has limited capacity to accommodate the Project, which would require large-scale loss of prominent and mature woodland, a key characteristic of the landscape and one of the special components, characteristics and qualities of the AONB.</i>' In light of the concerns regarding the boundary between these two LLCAs, together with the judgements of Susceptibility (see comments in 4.2.2. above) we are concerned that the West Kent Downs (sub-area Cobham) assessment has been downgraded.</p> <p>With regard to impacts on the AONB's special character, it is agreed there would be minimal impact on dramatic landform and views, and farmed character. There would however be impacts</p>

				<p>on woodland and trees and on the special quality of biodiversity rich habitats due to much of this area comprising Ancient Woodland and SSSI. While compensation planting is proposed, this will take years to provide the same level of benefit as that which would be lost, and much of which is proposed outside of this LLCA. There would also be a reduction in tranquillity as noted in the Assessment.</p> <p>See also comments above. We consider the rationale for the response to the assessment of West Kent Downs (sub area Shorne) will also apply to West Kent Downs (sub area Cobham) and West Kent Downs (overview for Sub areas Shorne and Cobham)</p> <p>The assessment ratings documented in the 2022 documents are the same as the 2020 documents, except for the Magnitude and Significance of effects at Design Year, as they have been downgraded in the 2022 documents. It is difficult to understand why there are these differences in ratings, as the other factors in the assessment appear to have remained the same. It is agreed that the Magnitude of effect would be 'Moderate Adverse' at Construction and at Opening Year; at Year 15 (Design Year) the requirements of utility easements, the permanence of the broadened transport corridor, and the impact on woodland character would result in a significant effect.</p> <p>In addition, Doc 6.3 ES Appx 7.9 - Table 1.3 re West Kent Downs LCA Overview states: <i>'The receptor has limited capacity to accommodate the Project, which would require large-scale loss of prominent and mature woodland, a key characteristic of the landscape and one of the special components, characteristics and qualities of the AONB.'</i></p>
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					In consideration of the above, it is considered that the assessment for Magnitude at Design Year should be ' Moderate Adverse ', and the assessment for Significance of effects should be ' Large Adverse '.
AONB Setting					
Setting – Higham Arable Farmland (Sub area Thong)	High <i>(Same as 2020 documents)</i>	Major Adverse => Very Large Adverse effect	Major Adverse => Very Large Adverse effect <i>(2020 Major Adverse => Large Adverse effect)</i>	Major Adverse => Large Adverse effect <i>(Same as 2020 documents)</i>	Agree.
Setting – Istead Arable Farmlands	Medium <i>(2020 High)</i>	Moderate Adverse => Moderate Adverse	Moderate Adverse => Moderate Adverse Effect <i>(Same as 2020 documents)</i>	Minor adverse => Slight adverse Effect <i>(Same as 2020 documents)</i>	Agree.
Setting – Higham Arable Farmland (Sub area Chalk)	High <i>(Same as 2020 documents)</i>	Major Adverse => V Large Adverse effect	Moderate Adverse => Moderate Adverse	Minor adverse => Slight adverse	Agreed.
Higham Arable Farmland (Sub area Gadshill)	Med	Negl Adverse => Slight Adverse	Neg Adverse => Slight Adverse	No change => Neutral	Agreed.

	(Same as 2020 documents)				
Shorne Wooded Slopes	High	Slight adverse=> Neg Adverse	Neg Adverse => Neutral	Mod Ben => Mod Beneficial	The project proposals rely on the screening effect of planting at 15 years. It may be overestimated. Therefore the significance at Design Year should be reconsidered as ' Neutral '.
Gravesend Southern Fringe	Med	Min Adverse => Slight Adverse	Min Adverse => Slight Adverse	Neg Adverse => Neutral	<p>The significance of effects at Construction may be underassessed, as it should reflect the construction of the major junction at its eastern extent. We consider the effect during Construction should be amended to 'Moderate Adverse' and therefore significant.</p> <p>This LCA is adjacent to the urban area, and needs to act as a buffer to the rural landscape south of HS1 (ref Gravesham Landscape Character Assessment (May 2009)) The proposed development provides an opportunity to integrate development into the landscape, to restore field structure, and consider ways of reducing the impact of visual detractors and infrastructure. Otherwise the assessment is Agreed.</p>
Shorne & Higham Marshes	Med	Min Adverse => Slight Adverse	Neg Adverse => Slight Adverse	No change => Neutral	<p>The Gravesham Landscape Character Assessment (May 2009) assesses the Sensitivity of Shorne Marshes as 'High', and states:</p> <p><i>'...the marshes are considered to be very distinct and possess a strong sense of place. They are considered to be of high sensitivity in terms of their character, distinctiveness and visibility'</i>.</p> <p>This distinct landscape has no roads and limited development. It has a sense of remoteness, extensive views to the River Thames and to higher ground to the south. It also has features of historic interest. It is largely flat and highly visually sensitive to changes within it and to view beyond it. It is considered that the character of this landscape is sensitive to development. Accordingly the assessment for Sensitivity should be 'High'.</p>

7.8 Visual baseline

- 7.8.1 A Zone of Theoretical Visibility (ZTV) of 5km from the Project road was agreed.
- 7.8.2 In addition, a Zone of Theoretical Visibility (ZTV) was set for the Main Construction Compounds. Document 6.2 Figure 7.8: ZTV (1 of 2) shows the potential extent of visibility of operations from within the compounds. The 3 Gravesham compounds and one (Northern Tunnel) compound north of the River will include 'operations' or structures up to 25m high, and the potential visibility of these is clearly shown on the maps. The ZTV for the Northern Tunnel Compound on 'Page 15 of 50' stops short of the A2 in the south and areas of KDAONB and the village of Higham in the south-east, even though there are areas close to the ZTV boundary from where up to 100% of operations are potentially visible. The close proximity of the ZTV boundary suggests that operations in the compound may be visible just beyond the ZTV boundary.
- 7.8.3 Our response: 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.

7.9 Assessment Criteria

- 7.9.1 41 Representative Viewpoints were selected to assess the visual effects of the proposal for the area south of the River Thames. A further 4 Representative Viewpoints have been included to assess the visual effects relating to the NDep compensation sites.
- 7.9.2 Photomontages have been included for 14 Representative Viewpoints.
- 7.9.3 A comparison of the current assessment documents with those issued in 2020 shows that the sensitivity of visual receptors at a number of viewpoints has been reduced, including some in the KDAONB, which have been reduced in some instances from 'very high' to 'high' (see next section)

7.10 Assessment of visual effects

- 7.10.1 Our response to the assessment of individual visual receptors is set out in Table 7.2: LVIA: Visual Effects Assessment - Analysis and Comments
- 7.10.2 In addition, 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.
- 7.10.3 **Summary of visual effects on the KDAONB**

- (i) There would be negative effects on views from and into the Kent Downs AONB as a result of the loss of defining woodland and the introduction of new elevated and temporary and permanent prominent features (new gantries, Thong Lane and Brewers Road green bridges, and new street lighting). The resultant vegetation loss would noticeably impact the woodland along the skyline in a number of views which are a defining characteristic of the West Kent Downs landscape character.

7.11 Comparison with documenting of 2020 assessment

- 7.11.1 Table 7.3: Landscape and Visual effects Assessment – comparison between 2020 and 2022 documents, sets out the assessment ratings in the categories of Visual Sensitivity, Magnitude and Significance, for Construction, Opening Year and Design Year.
- 7.11.2 The table shows the assessment of Visual Sensitivity of the Representative Viewpoints has reduced overall when compared to those reported in 2020, even though no significant changes have been made to the proposal since that time. Notably, the sensitivity of receptors from some viewpoints in the KDAONB has been reduced from 'Very High' to 'High'. Overall, the number of Representative Viewpoints with the highest degree of sensitivity (Very High) has reduced in number from 22 Representative Viewpoints in 2020 to 7 in 2022.
- 7.11.3 The overall effect on viewpoints S08 and S09 has been assessed as 'Slight Adverse' in the 2022 documents (and therefore not 'significant') whereas in the 2020 documents they were both assessed as 'Very Large Adverse' (i.e. the highest rating for negative effects) and therefore 'significant'; and the overall effect on viewpoints S12, S13 and S14 has been assessed as 'Slight Beneficial' (and therefore 'not significant') whereas in the 2020 documents they were all assessed as 'Large Adverse' (and therefore significant)
- 7.11.4 The assessment of Magnitude and Significance of Effects have been downgraded in the 2022 documents. In particular, the overall Significance of Effects at 15 Years (Design Year) has been downgraded for 12 of the representative viewpoints; and the highest (ie the worst) assessment rating of 'Very Large Adverse' has been downgraded from 6 representative viewpoints in 2020 to zero representative viewpoints in 2022. In six cases the downgrading has resulted in the effect moving from 'significant' to 'not significant'.
- 7.11.5 Our response: The downgrading of the landscape and visual baseline is of great concern, as it directly affects the assessment of landscape and visual impacts. Further, the re-grading of the LVIA since it was reported in 2020 and the resulting reduction in the significance of effects of the proposal, for both landscape and visual receptors. We would request the applicant to provide an explanation for the changes to baseline criteria, and the changes to assessment results, and consider reassessment.

Table 7.2: LVIA: Visual Effects Assessment - Analysis and Comments

Visual effects assessment - Analysis and Comments on LTC documents

	Visual Receptor	Sensitivity	Magnitude of effect (Construction) & Significance	Magnitude of effect (Opening Year Winter) & Significance	Magnitude of effect (Year15 Summer) & Significance	GBC response to the Assessment
S01	View from footpath NS150, at Gadshill on the outskirts of Higham settlement (Local Landscape Character Area (LLCA) Higham Arable Farmland (sub area Gadshill)). View centred south-south-west for recreational receptors.	Moderate <i>(Same as 2020 documents)</i>	No change => Neutral	No Change => Neutral	No Change => Neutral	Agreed.
S02	View from footpath NS160 located on the southwestern edge of Great Crabbles Wood (LLCA Shorne Wooded Slopes). View centred south-west for recreational receptors.	Moderate <i>(Same as 2020 documents)</i>	Negligible => Slight Adverse	Negligible => Slight Adverse	Negligible => Slight Adverse	Construction works would be hardly seen, but new gantries and light columns would be visible once the new road is operational. Accordingly the assessment is Agreed.

S03	View from the Kent Downs AONB on footpath NS161, located north of Park Pale, east of Shorne Woods Country Park (LLCA West Kent Downs (sub area Shorne)). View centred south-south-east for recreational receptors.	Very High <i>(Same as 2020 documents)</i>	Moderate => Large adverse effect <i>(2020 Moderate => Large adverse effect)</i>	Negligible => Slight adverse <i>(2020 Negligible => Slight adverse)</i>	Minor => Moderate Beneficial <i>(2020 Minor => Moderate beneficial effect)</i>	<p>Strongly disagree with assessed Magnitude of effect at all stages of development. At present from this view the A2 corridor is almost entirely screened by vegetation and HS1, despite being elevated, only readily apparent when a train goes past due to maturing vegetation on the embankment. Harlex Haulage Depot at Park Pale is partially screened in Summer, less so in Winter. Views are currently across grassland to the woodland to the south beyond, with views possible of the roof of the Darnley Mausoleum.</p> <p>The scheme will remove existing vegetation to the north of the Harlex Depot, to facilitate a new access track to the attenuation pond, opening up views of the haulage yard. The new access proposed to the Depot to the west of the existing site will also be in close-up views. Existing screening planting to the north of the A2 and between the A2 and HS1 would be removed. Utilities works will also be taking place.</p> <p>The higher topography of the viewpoint means the works will be particularly visible over the proposed planting until it has matured.</p> <p>There is no photomontage from this viewpoint, and we consider this should have been provided to support the applicant's assessment. Section 7.15.7 examines the impacts on the Park Pale area in more detail.</p> <p>It is considered that the Magnitude of effects is underestimated for all scenarios, and particularly for Year 1 as planting will not have established. The views of the widened infrastructure, HS1 and Park</p>
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						<p>Pale will all be much more apparent in the view than at present. Lighting from the construction works and from vehicles at opening year will be very apparent. It is considered that a 'Major' Magnitude of Effect at Construction and Year 1 would be more realistic and 'Minor Adverse' at Design Year.</p> <p>The existing vegetation screens much of the current transport corridor, certainly during summer months, so the significance of effect of the project will be very large. Also, there will be a combination of construction and utilities activities taking place.</p> <p>With a 'Very High' Sensitivity and 'Minor Adverse' Magnitude, this should result in a 'Moderate or Large Adverse' and therefore significant residual effect.</p>
SO4	View from the Kent Downs AONB on Park Pale, part of the NCN Route 177* and Darnley Trail recreational route adjacent to Park Pale overbridge. Also represents views from the end of footpath NS161 (LLCA West Kent Downs (sub area	High <i>(2020 – Very High)</i>	Moderate => Large Adverse <i>(2020 Moderate => Large adverse effect)</i>	Moderate => Moderate Adverse <i>(2020 Moderate => Large adverse effect)</i>	Moderate => Moderate Adverse <i>(2020 Moderate => Large adverse effect)</i>	<p>As the VP is located on a public Right of Way and NCR, it should be assessed as having 'Very High' Sensitivity (also in line with the 2020 assessment documents)</p> <p>Agree with the assessed Magnitude of effects.</p> <p>With 'Very High' sensitivity and 'Moderate' Magnitude, this should result in a 'Large Adverse' and therefore significant residual effect.</p>

	Shorne)). View centred south-east for recreational receptors.					
S05	View from the Kent Downs AONB on Park Pale overbridge, part of the NCN Route 177* and Darnley Trail recreational route (LLCA West Kent Downs (sub area Shorne)). View centred north-north-west for recreational receptors.	High <i>(2020 – Very High)</i>	Major => V Large Adverse <i>(2020 Major => V Large adverse effect)</i>	Major => Large Adverse <i>(2020 Major => V Large adverse effect)</i>	Moderate => Moderate Adverse <i>(2020 Major => V Large adverse effect)</i>	As the VP is located on a public Right of Way and NCR, it should be assessed as having 'Very High' Sensitivity (also in line with the 2020 assessment documents) Agree with the assessed Magnitude of effects. The highway corridor would be more significantly more intrusive than existing with additional lanes; the replacement planting does not replicate the existing situation, having much less vegetation overall; with no central reservation planting to soften or minimise the hard surfacing, and the replacement of trees adjacent to the highway with grass. With a 'Very High' Sensitivity and 'Moderate' Magnitude this should result in a ' Large Adverse ' and therefore significant residual effect.
S05a	View from the Kent Downs AONB on Park Pale overbridge, part of the NCN Route 177* and Darnley Trail recreational route (LLCA West Kent Downs (sub area	High <i>(2020 – Very High)</i>	Major => V Large Adverse <i>(2020 Major => V Large adverse effect)</i>	Major => Large Adverse <i>(2020 Major => V Large adverse effect)</i>	Moderate => Moderate Adverse <i>(2020 Major => V Large adverse effect)</i>	As the VP is located on a public Right of Way and NCR, it should be assessed as having 'Very High' Sensitivity (also in line with the 2020 assessment documents) Agree with Construction and Opening Year effect. However, disagree that this would reduce to Moderate at Year 15. This rating is justified in the LVIA on the basis of new planting. However, the highway corridor would be significantly more intrusive than existing with additional lanes, with no

	Shorne)). View centred west for recreational receptors.					planting in the central reservation, and the replacement planting does not replicate the existing situation with much less vegetation overall, plus the replacement of trees adjacent to the highway with grass. The residual impacts are demonstrated in a photomontage. The Magnitude of Effect is considered to be 'Major' at Year 15, as assessed in the 2020 Report. With 'Very High' Sensitivity and 'Major' Magnitude, this should result in a ' Very Large Adverse ' and therefore significant residual effect.
S06	View from the Kent Downs AONB and the Grade I listed Darnley Mausoleum and Darnley Trail, within Cobham Hall Grade II* Registered Park and Garden (LLCA West Kent Downs (sub area Cobham)). View centred north-west for recreational receptors.	Very High <i>(2020 – Very High)</i>	Negligible => slight adverse effect	No change => Neutral	No change => Neutral	Agree.
S07	View from the Kent Downs AONB on	Very High	Negligible => slight adverse effect	Negligible => Slight adverse	Negligible => Slight adverse	Agree.

	<p>footpath NS182 within Rochester and Cobham Park Golf Club and Cobham Hall Grade II* Registered Park and Garden. Also represents views from footpath NS180 (LLCA West Kent Downs (sub area Cobham)). View centred north-north-west for recreational receptors.</p>	<p><i>(2020 – Very High)</i></p>				
S08	<p>View from the Kent Downs AONB on footpath NS 179, within Cobham Hall Grade II* Registered Park and Garden (LLCA West Kent Downs (sub area Cobham)). View centred west-north-west for recreational receptors.</p>	<p>High <i>(2020 – Very High)</i></p>	<p>Moderate => Large Adverse <i>(2020 Major => V Large adverse effect)</i></p>	<p>Moderate => Moderate Adverse <i>(2020 Major => V Large adverse effect)</i></p>	<p>Minor => Slight adverse <i>(2020 Major => V Large adverse effect)</i></p>	<p>As the viewpoint is located on a public Right of Way, it should be assessed as having ‘Very High’ sensitivity.</p> <p>Agree there would be a ‘Moderate’ magnitude of effect at Construction and Opening Year. The planting between the PRow and HS1 would remain and is just starting to mature and provide mitigation for the railway line. However, the tree planting between HS1 and the A2 would be removed, opening up views of the widened highway and its associated structures.</p> <p>It is proposed to replace some of the removed trees with woodland planting, but the tree belt would not be as wide and not as effective in screening and providing separation between the footpath and the widened highway. Furthermore, as demonstrated</p>

						<p>with the HS1 mitigation planting, which is approximately 20 years old, it is not agreed that the planting would be wholly effective at Year 15. It is therefore considered that the Magnitude should be assessed as 'Moderate' at Design Year.</p> <p>With 'Very High' Sensitivity and 'Moderate' Magnitude this should result in a 'Moderate or Large Adverse' (and therefore significant) residual effect.</p>
S09	View from the Kent Downs AONB on Park Pale/Darnley Trail/NCN Route 177*, adjacent to Brewers Wood, part of Shorne Woods Country Park (LLCA West Kent Downs (sub area Shorne)). View centred south for recreational receptors.	High <i>(2020 – Very High)</i>	Moderate => Moderate Adverse effects <i>(2020 Moderate => Very Large adverse effect)</i>	Moderate => Moderate Adverse <i>(2020 Moderate => Very Large adverse effect)</i>	Minor => Slight adverse <i>(2020 Moderate => V Large adverse effect)</i>	<p>As the viewpoint is located on a public Right of Way and NCN, it should be assessed as having 'Very High' Sensitivity.</p> <p>Agree with assessed Magnitude at all stages.</p> <p>With 'Very High' Sensitivity and 'Minor' Magnitude this should result in a 'Moderate Adverse' and therefore significant residual effect.</p>
S10	View from the Kent Downs AONB on a path within the Pleasure Grounds at Cobham Hall part of the Cobham Hall Grade II* Registered Park and Garden (LLCA West Kent Downs (sub	Very High	Negligible => Slight Adverse effect	Negligible => Slight adverse	No change => Neutral	Agree.

	area Cobham)). View centred north-north-west for recreational receptors.					
S11	View from the Kent Downs AONB on footpath NS179 within Cobham Hall Grade II* Registered Park and Garden (LLCA West Kent Downs (sub area Cobham)). View centred north-north-west for recreational receptors.	Very High <i>(2020 – Very High)</i>	Moderate => Large Adverse <i>(2020 Moderate => Large adverse effect)</i>	Moderate => Large Adverse <i>(2020 Minor => Moderate adverse)</i>	Minor => Moderate Adverse <i>(2020 Negligible => Slight adverse effect)</i>	Agree there would be a moderate magnitude of effect at Construction and Opening Year due to extensive tree loss adjacent to Brewers Road – although trees within the Park and on south of HS1 would remain and provide some screening. The proposed replacement planting on Brewers Road embankment is mainly chalk grassland, with some trees and shrubs on the east side of the new green bridge which would filter, rather than screen views. Therefore, it is considered the assessed 'Minor' Magnitude of effect at Design Year is over optimistic and would be more realistically assessed as remaining 'Moderate'. However, the significance of effect is agreed .
S12	View from the Kent Downs AONB on Brewers Road/Luddesdown Trek/NCN Route 177*, adjacent to Brewers Wood/Shorne Wood (part of Shorne Woods Country Park) (LLCA West Kent Downs (sub	High <i>(2020 – Very High)</i>	Moderate => Large Adverse <i>(2020 Major => V Large adverse effect)</i>	Moderate => Moderate Adverse <i>(2020 Major => V Large adverse effect)</i>	Minor => Slight beneficial <i>(2020 Moderate => Large adverse effect)</i>	As the VP is located on a public Right of Way, it should be assessed as having 'Very High' Sensitivity (this is also in line with the 2020 assessment documents) The photomontage from this viewpoint shows that there is great reliance on the growth of the screening planting, and it shows what little impact the 'greening' of this bridge will make. The growth of screening vegetation after 15 years may be overestimated. A valid comparison is with the HS1 mitigation planting, which was planted some 20 years ago, and has not achieved the scale of growth suggested by the proposal mitigation. Accordingly the Magnitude at design year should be assessed

	area Shorne)). View centred south-southwest for recreational receptors.					as 'Moderate'. It is considered that improvements to the design of the green bridge would help with the assessment. The 'Very High' Sensitivity and 'Moderate' Magnitude should result in an assessment of a 'Moderate or Large Adverse' and therefore significant effect.
S13	View from the Kent Downs AONB on Brewers Road overbridge and the Luddesdown Trek above the A2 eastbound carriageway (LLCA West Kent Downs (sub area Shorne)). View centred south for recreational receptors.	High <i>(2020 – Very High)</i>	Major => V Large Adverse <i>(2020 Major => V Large adverse effect)</i>	Major => Large Adverse <i>(2020 Major => V Large adverse effect)</i>	Minor => Slight beneficial <i>(2020 Moderate => Large adverse effect)</i>	Agree with assessed Magnitude of effects at Construction and at Opening Year, with the loss of the important wooded central reservation and views of the entire widened highway visible. It is considered that the Green Bridge planting would not provide the level of filtering of views shown in the Photomontages, and together with the loss of existing vegetation, this would result in a 'Very Large Adverse' effect at Opening Year. The Magnitude of effect at Design Year would not be considerably less than at Opening Year and should be assessed as 'Moderate'. The 'Slight Beneficial' assessment of effect at Design Year is unrealistic in terms of the achieved mitigation, particularly during winter months. It is considered that improvements to the design of the green bridge would help with the assessment. With 'High' Sensitivity and 'Moderate' Magnitude, this should result in a 'Moderate Adverse' and therefore significant effect.
S14	View from the Kent Downs AONB on Brewers Road overbridge and the	High <i>(2020 – Very High)</i>	Major => V Large Adverse	Major => Large Adverse	Minor => Slight beneficial	Agree with assessed Magnitude of effects at Construction and at Opening Year, with the loss of the important wooded central reservation, and views of the entire widened highway visible.

	Luddesdown Trek above the A2 westbound carriageway/HS1 (LLCA West Kent Downs (sub area Shorne)). View centred north-east for recreational receptors.		<i>(2020 Major => V Large adverse effect)</i>	<i>(2020 Major => V Large adverse effect)</i>	<i>(2020 Moderate => Large adverse effect)</i>	<p>The Baseline photograph clearly shows the important role of the central reservation. However, it is considered that the Green Bridge planting would not offer the level of filtering of views shown in the Photomontages, and there would still be a 'Very Large Adverse' effect at Opening Year. It is considered that improvements to the design of the green bridge would help with the assessment.</p> <p>The Magnitude of effect at Design Year would not be considerably less than at Opening Year and should be assessed as 'Moderate'. The 'Slight Beneficial' assessment of effect at Design Year is unrealistic in terms of the achieved mitigation, particularly during winter months.</p> <p>With 'High' Sensitivity and 'Moderate' Magnitude, this should result in a 'Moderate Adverse' and therefore significant effect.</p>
S15	View from the Kent Downs AONB on footpath NS178 located adjacent to the Halfpence Lane roundabout (LLCA West Kent Downs (sub area Cobham)). View centred north for recreational receptors.	High <i>(2020 – Very High)</i>	Moderate => Moderate Adverse <i>(2020 Major => V Large adverse effect)</i>	Minor => Slight Adverse <i>(2020 Major => V Large adverse effect)</i>	No change => Neutral <i>(2020 Minor => Moderate adverse effect)</i>	<p>As the VP is located on a public Right of Way, it should be assigned as having 'Very High' Sensitivity.</p> <p>It is considered that the Magnitude of effect is underassessed at Construction and at Opening Year, given the extent of the construction works and the proximity of the viewpoint. Also, as previously, the effect of screening planting may be overstated. The Magnitude of effect at Design Year is unrealistic in the assessment of 'No Change' and should be assessed as 'Minor'.</p> <p>With 'High' Sensitivity and 'Minor' Magnitude, this should result in a 'Slight Adverse' effect.</p>

S16	View from the Kent Downs AONB and Randall Heath Woods, on a permissive path within Shorne Woods Country Park (LLCA West Kent Downs (sub area Shorne)). View centred south-southwest for recreational receptors.	Very High <i>(2020 – Very High)</i>	Minor => Moderate Adverse <i>(2020 Minor => Moderate adverse effect)</i>	Minor => Moderate Adverse <i>(2020 Minor => Moderate adverse effect)</i>	Negligible => Slight Adverse <i>(2020 No change => Neutral)</i>	The view is heavily filtered by existing woodland. Agree.
S17	View from the Kent Downs AONB on the NCN Route 177*/Timeball and Telegraph Trail Long Distance Path, on Thong Lane adjacent to The Inn on the Lake Hotel (LLCA West Kent Downs (sub area Shorne)). View centred south for recreational receptors.	High <i>(2020 – Very High)</i>	Major => V Large Adverse <i>(2020 Major => V Large adverse effect)</i>	Major => Large Adverse <i>(2020 Major => V Large adverse effect)</i>	Moderate => Moderate Adverse <i>(2020 Major => V Large adverse effect)</i>	As the VP is located on a public Right of Way, it should be assessed as having 'Very High' Sensitivity. Agree with assessed Magnitude of effect for Construction and at Opening Year. However, the baseline photography shows the screening effect of existing vegetation, even during the Winter months. The Photomontages show the significant changes in the view. The character of the view becomes more urbanised and opened up, and is dominated by the high level bridge and retaining wall facing the viewer, which bring about a significant change in the scale of infrastructure. The scale and raised heights of infrastructure, together with increased width of carriageways, will be permanent features which will change the landscape and views. Also, as previously, the effect of screening planting after 15 years may be optimistic. For these reasons the

						<p>Magnitude of effect at Design Year should be assessed as 'Major'.</p> <p>With 'Very High' Sensitivity and 'Major' Magnitude, this should result in a 'Very Large Adverse' and therefore significant residual effect.</p>
S18	<p>View from the Kent Downs AONB on the HS1 green bridge and Timeball and Telegraph Trail Long Distance Path (LLCA West Kent Downs (sub area Cobham)). View centred north-west for recreational receptors.</p>	<p>Very High <i>(2020 – Very High)</i></p>	<p>Major => V Large Adverse <i>(2020 Major => V Large adverse effect)</i></p>	<p>Major => V Large Adverse <i>(2020 Major => V Large adverse effect)</i></p>	<p>Moderate => Large Adverse <i>(2020 Major => V Large adverse effect)</i></p>	<p>The baseline photographs shows the screening effect of existing planting, even in the Winter months, and the transport corridor is almost hidden from view. The Photomontages reveal a far more urban view as result of the scheme, with hard surfacing and the structure of the new bridge clearly shown. As previously, the screening planting may be less effective than shown. It is considered that the viewer (visual receptor) will be far more exposed to the sights and sounds of traffic in this location, even after 15 years. The Magnitude of effects at Design Year should be assessed as 'Major'.</p> <p>With 'Very High' Sensitivity and 'Major' Magnitude, this should result in a 'Very Large Adverse' and therefore significant residual effect.</p>
S19	<p>View from footpath NS177, located within Jeskyns Community Woodland. Also represents views from footpath NS177A (LLCA Istead Arable</p>	<p>High</p>	<p>Moderate => Moderate Adverse</p>	<p>Moderate => Moderate Adverse</p>	<p>Minor => Slight Adverse</p>	<p>Agree.</p>

	Farmlands). View centred north-west for recreational receptors.					
S20	View from a recreational permissive route within Jeskyns Community Woodland (LLCA Instead Arable Farmlands). View centred north-east for recreational receptors.	High	Moderate => Large Adverse	Minor => Moderate Adverse	Negligible => Slight Adverse	Agree.
S20a	View from Jeskyns Community Woodland. Also represents views from northern end of footpath NS177 (LLCA Istead Arable Farmlands). View centred north-east for recreational receptors.	High	Major => Large Adverse	Moderate => Moderate Adverse	Minor => Slight Adverse	The viewpoint is slightly more elevated than S20 and therefore there will be greater visibility of traffic and infrastructure. The assessment relies in part on the effectiveness of mitigation planting in 15 years. However, the taller elements of the project, the transport corridor infrastructure and the increased vehicle movements would see seen. Photomontages (LTC document 6.2 Figure 7.19 (1 of 4) provide imagery of the proposal. Accordingly, the Magnitude of effects at Design Year should be assessed as 'Moderate'. With 'High' Sensitivity and 'Moderate' Magnitude, this should result in a ' Moderate Adverse ' and therefore significant residual effect.
S21	View from footpath NU29/Wealdway	High	Minor => Slight Adverse	Minor => Slight Adverse	Negligible => Slight Adverse	Agree.

	recreational route to the north of Ifield Court. Also represents views from footpath NU18 (LLCA Istead Arable Farmlands). View centred east-north-east for recreational receptors.					
S22	View from Watling Street on the A2 overbridge (LLCA Gravesend Southern Fringe). View centred east-south-east for users of the main road.	Low	Moderate => Slight Adverse	Minor => Slight Adverse	Negligible => Neutral	Agree.
S24	View from footpath NS167 adjacent to Claylane Wood. Also represents views from bridleway NS174 (LLCA Higham Arable Farmland (sub area Thong)) looking towards the Kent Downs AONB. View centred east for	Moderate	N/A	Major => Large Adverse	Major => Large Adverse	The assessment was made at a slightly different location as the existing PROW would be diverted (see document 7.4 Project Design Report Part E). It is considered that the close proximity to the main A2/A122 junction will have a very significant effect on receptors at the viewpoint, dominating the view at opening year and at design year. The wooded skyline would be obscured by the proposed development. It is considered that the effects, this close to the major junction, with several levels of carriageways, additional lighting and the sheer scale of change, will be Very Large Adverse .

	recreational receptors.					
S25	View from footpath NS167 at the western edge of Thong village and Thong Conservation Area (LLCA Higham Arable Farmland (sub area Thong)). View centred south-west for recreational receptors.	Moderate	N/A	Major => Large Adverse	Minor => Slight Adverse	The viewpoint was not assessed at Construction as the public Right of Way will be stopped up and diverted. The viewpoint was moved to a new position to where the PROW will be diverted. Earth mounding will block views to the road junction, though lighting poles will be visible. In addition, views to the important wooded ridge on the skyline will be lost and replaced with lighting poles and gantries. The changes proposed would also affect the perception of the historic settlement of Thong.
S26	View from Thong village and Thong Conservation Area (residential properties along the east of Thong Lane) (LLCA Higham Arable Farmland (sub area Thong)). View centred south-south-east for residential receptors.	High	No change => Neutral	No change => Neutral	No change => Neutral	Agree.
S27	View from footpath NS169, looking towards Shorne Woods and the Kent Downs AONB (LLCA Higham Arable Farmland (sub area	Moderate	N/A	Major => Large Adverse	Moderate => Moderate Adverse	Agree.

	Thong)). View centred east-south-east for recreational receptors.					
S28	View from footpath NS169 adjacent to Gravesend urban edge, looking towards Shorne Woods within the Kent Downs AONB, and St Mary Magdalene Church, Cobham (LLCA Higham Arable Farmland (sub area Thong)). View centred east-south-east for recreational receptors.	Moderate <i>(2020 = Very High)</i>	N/A	Moderate => Moderate Adverse <i>(2020 Moderate => Large Adverse)</i>	Moderate => Moderate Adverse <i>(2020 Moderate => Large Adverse)</i>	<p>The current view of the road is far in the distance, comprising a view of a gantry and lighting columns. The overall wide view is dominated by fields in the foreground and the wooded backdrop. The proposal will introduce a large-scale and wide view of multi-levels of roads, viaducts and traffic that make up the main road junction of the A2, together with the nearby views of the infrastructure associated with the tunnel approach road and the tunnel portal. This will introduce a very different type of view, with new, harder, elements, and blocking the wooded backdrop.</p> <p>The view at night would be greatly changed, with lighting from street lighting and vehicles in prominent view.</p> <p>It is considered that the Sensitivity of the view is underassessed. This is an open, mostly rural view, at the edge of the urban area, and on a public Right of Way, from where the KDAONB may be seen. The Sensitivity should be assessed as 'High'. The proposal will become the most dominant feature in the view, and as such, the Magnitude at opening year and Design Year should be assessed as 'Major'.</p> <p>With 'High' Sensitivity and 'Major' Magnitude, this should result in a 'Large Adverse' and therefore significant residual effect.</p>

S29	View from the Kent Downs AONB on Shorne Ifield Road located to the north of Shorne Woods Country Park (LLCA Higham Arable Farmland (sub area Chalk)). View centred north-west for users of the local road.	High <i>(2020 – Very High)</i>	Major => V Large Adverse <i>(2020 Major = V Large adverse effect)</i>	Minor => Slight Adverse <i>(2020 Minor = Moderate adverse effect)</i>	Minor => Slight Adverse <i>(2020 Negligible = Slight adverse effect)</i>	<p>The long views from this viewpoint currently extend across the River to the landscape beyond. The proposal will curtail these views, replacing them with mid-range views towards earth mounds, and an increase in lighting at night. Although the position of this viewpoint is just off a minor road connecting Thong village and Shorne Village, the viewpoint is located close to an access point where a public Right of Way joins the road from Shorne Woods Country Park (at Brummelhill Wood), and forms part of the local walking route network. As such, the views from the Representative Viewpoint are more sensitive than would be the case if they were only glimpsed by drivers of vehicles. There are long views from this viewpoint, especially in the Winter, across open fields towards the Thames. As the viewpoint is within the KDAONB, and on a minor road connecting local PROWs into the Shorne Woods Country Park, it is considered that the Sensitivity should be assessed as 'Very High' (as it was in the 2020 documents)</p> <p>The construction works for the A122 road – including the excavation of the road cutting – the southern portal, the tunnel and a large construction compound will be very visible and close to the viewpoint, it is considered that the effect during construction will be 'Very Large Adverse'.</p> <p>The effect of the combination of these activities is likely to remain by the opening year, including increased levels of lighting and placements of earthworks, including around the tunnel entrance. It</p>
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						<p>is considered that the significance of effects at opening year will be 'Moderate Adverse'.</p> <p>By Design Year (year 15) vegetation will soften the earthworks, but the view will be changed, some of the long views towards the Thames will be lost, and lighting and permanent structures will be in view. It is difficult to properly assess this viewpoint at Design Year as there are no photomontages provided or other visual imagery for this location.</p>
S30	View from Thong Lane in the eastern urban edge of Gravesend (Riverview Park) adjacent to the entrance of Southern Valley Golf Club (LLCA Gravesend Urban Area). View centred south-south- east for users of the local road.	Moderate	Major => Large Adverse	Moderate => Moderate Adverse	Minor => Slight adverse	Agree.
S31	View from footpath NG8 located within Southern Valley Golf Club at the urban edge of Gravesend (Riverview Park) (LLCA Higham Arable Farmland (sub area Chalk)).	Moderate	N/A	Moderate => Moderate Adverse	Minor => Slight Adverse	Agree.

	View centred east-north-east for recreational receptors.					
S32	View from elevated location along footpath NS316 located immediately west of Shorne Hill, with views to the Kent Downs AONB. Also represents views from footpath NS163 (LLCA Higham Arable Farmland (sub area Chalk)). View centred west for recreational receptors.	Moderate	Major => Large Adverse	Minor => Slight Adverse	Minor => Slight Adverse	Agree.
S33	View taken at intersection of footpaths NG7, NG8, NG9, on northern edge of Southern Valley Golf Club (LLCA Higham Arable Farmland (sub area Chalk)). View centred north-west for recreational receptors.	Moderate	N/A	Moderate => Moderate Adverse	Minor => Slight Adverse	The viewpoint has moved slightly north to take account of the proposed PROW diversion. In the Winter, extensive and wide views across the River Thames to the mostly industrial and riverside landscape beyond will be largely lost, with some views remaining to the north-east. During all stages and permanently, there will be an increase in night-time lighting from the new road. Agree.
S34	View from footpath	Moderate	N/A	Minor => Slight Adverse	Negligible => Slight Adverse	Agree.

	NS163A located adjacent to residential properties fronting the A226 Gravesend Road (LLCA Higham Arable Farmland (sub area Chalk)). View centred south-west for recreational receptors.					
S35	View from A226 Gravesend Road near Chalk (LLCA Higham Arable Farmland (sub area Chalk)). View centred south-south-east for users of the main road.	Low	Major => Moderate Adverse	Moderate => Slight Adverse	Negligible => Neutral	Agree.
S36	View from footpath NS172 off Queen's Farm Road. Also represents views from footpath NG5 (LLCA Higham Arable Farmland (sub area Chalk)). View centred west for recreational receptors.	Moderate	Minor => Slight Adverse	Negligible => Slight Adverse	Negligible => Neutral	Agree.

S37	View from NCN Route 1/footpath NG2/NG4 adjacent to former Thames and Medway Canal (LLCA Shorne and Higham Marshes). View centred south for recreational receptors.	High	Moderate => Moderate Adverse	Minor => Slight Adverse	Minor => Slight Adverse	Agree.
S38a	View from Saxon Shore Way Long Distance Path/footpath NS138 at intersection with bridleway NS318 adjacent to Shornemead Fort. Also represents views from footpath NG1 (LLCA Shorne and Higham Marshes). View centred north-west for recreational receptors.	High	Minor => Slight Adverse	Minor => Slight Adverse	Minor => Slight Adverse	Agree.
S38b	View from Saxon Shore Way Long Distance Path/footpath NS138 at intersection with	High	Minor => Slight Adverse	Negligible => Slight Adverse	Negligible => Slight Adverse	Agree.

	bridleway NS318 immediately adjacent to Shornemead Fort. Also represents views from footpath NG1 (LLCA Shorne and Higham Marshes). View centred south-west for recreational receptors.					
S39	View from local recreational ground on area of elevated ground at Windmill Hill, within residential area of Gravesend (LLCA Gravesend Urban Area). View centred north-north-east for residential receptors.	High	Minor => Slight Adverse	Negligible => Slight Adverse	Negligible => Slight Adverse	Agree.
N-Dep-RV-01	View from footpath KT/NS/176. Also represents views from footpath KT/NS/175 (LLCA Instead Arable Farmlands). View centred west-north-west for recreational receptors.	Moderate	Moderate => Moderate Adverse			Agree.

NDep RV- 02	View from footpath KT/NS/168, north- west of Woodlands Lane in Shorne Ridgeway (LLCA West Kent Downs (sub area Shorne)). View centred north- west for recreational receptors.	Very High	No change => Neutral			Agree.
N- Dep- RV- 03	View from Swiller's Lane and residential properties along Barndale Court and Warren View, east of Shorne village (LLCA Shorne Wooded Slopes). View centred south- east for recreational and residential receptors.	Moderate for users of Swiller's Lane High for residents	No change => Neutral (for both receptors)			Agree.
N- Dep- RV- 04	View from footpath KT/NS/159. Also represents views from footpath KT/NS/156 (LLCA Shorne Wooded Slopes). View centred south-south- west for recreational receptors.	Moderate	No change => Neutral			Agree.

Table 7.3: Landscape and Visual assessment – comparison between 2020 and 2022 documents

Landscape Value and Assessment of Landscape Effects - Comparison between 2020 and 2022 documents													
Landscape Receptor	Landscape Value		Situation in relation to the KDAONB	Susceptibility to change	Assessment of Effects								Disagree with assessment in 2022
	2020	2022			Construction			Operation					
					Sensitiv	Magn	Signific	Magnitude		Significance			
									Open	15 yrs	Open	15 yrs	
NCA													
119 North Downs	H	H		Med		H	Min Adv	Slt Adv	Min Adv	Neg	Slt Adv	Slt Adv	
113 North Kent Plain	H	H		Med		H	Mod Adv	Mod Adv	Mod Adv	Min Adv	Mod Adv	Slt Adv	
81 Greater Thames Estuary	M	M		Low									
LLCA													
WK Cobham	H	H		Med		H	Min Adv	Mod Adv	Neg Adv	Neg Adv	Slt Adv	Slt Adv	Disagree
WK Shorne	H	H		H		VH	Maj Adv	VLA	Mod Adv	Min Adv	LA	Mod Adv	Disagree
WK overview				H		VH	Mod Adv	LA	Mod Adv	Min Adv	LA	Mod Adv	Disagree
Higham Arable Farmland (Gadshill)	H	Med	Setting	Med		Med	Negl Adv	Slt Adv	Neg Adv	No chng	Slt Adv	Neut	
Shorne Wooded Slopes	H	H	Setting	Med		H	Negl Adv	Slt Adv	Neg Adv	Mod Ben	Neutr	Mod Ben	Disagree
Higham (Thong)	H	H	Setting	H		H	Maj Adv	VLA	Maj Adv	Maj Adv	VLA	LA	
Higham (Chalk)	H	H	Setting	H		H	Maj Adv	VLA	Mod Adv	Min Adv	Mod adv	Slt adv	
Istead Arable Farmlands	Med	Med	Setting	H		Med	Mod Adv	Mod Adv	Mod Adv	Min Adv	Mod Adv	Slt Adv	
Grvsnd Southn Frnge	Med	Med	Setting	Low		Med	Min Adv	Slt Adv	Min Adv	Neg Adv	Slt Adv	Neut	
Shorne & Higham Marshes	H	H	Setting	Low			Min Adv	Slt Adv	Neg Adv	No Chng	Slt Adv	Neut	

Visual Assessment - Comparison between 2020 and 2022 documents

Lower Sensitivity assessed in 2022
 Lesser significance assessed in 2022
 Greater Significance assessed in 2022
 Lesser magnitude assessed in 2022

	CONSTRUCTION						OPERATION								Disagree with assessment 2022		
	Visual Sensitivity		Magnitude		Significance		Visual Sensitivity		Magnitude				Significance				
	2020	2022	2020	2022	2020	2022	2020	2022	2020		2022		2020			2022	
									Open	15 years	Open	15 years	Open	15 years		Open	15 years
S01*	Mod	Mod		No ch		Neut	Mod	Mod			No ch	No ch			Neut	Neut	
S02*	Mod	Mod		Negl		Slt Adv	Mod	Mod			Negl	Negl			Slt Adv	Slt Adv	
S03	VH	VH	Mod-min	mod	LA	LA	VH	VH	Neg	Min	Neg	Min	Slt Adv	Mod ben	Slight Adv	Mod ben	
S04	VH	H	mod	mod	LA	LA	VH	H	Mod	Mod	Mod	Mod	Lg Adv	Lg Adv	Mod Adv	Mod Adv	
S05	VH	H	maj	maj	VLA	VLA	VH	H	Maj	Maj	Maj	Mod	VLA	VLA	Lg Adv	Mod Adv	
S05a	VH	H	maj	maj	VLA	VLA	VH	H	Maj	Maj	Maj	Mod	VLA	VLA	Lg Adv	Mod Adv	
S06*	VH	VH		Negl			VH	VH			No ch	No ch			Neut	Neut	
S07*	VH	VH		Negl			VH	VH			Neg	Neg			Slt Adv	Slt Adv	
S08	VH	H	maj	mod	VLA	LA	VH	H	Maj	Maj	Mod	Min	VLA	VLA	Mod Adv	Slt Adv	
S09	VH	H	mod	mod	VLA	MA	VH	H	Mod	Mod	Mod	Min	VLA	VLA	Mod Adv	Slt Adv	
S010*		VH		negl		Slt Adv		VH							Slt Adv	Slt Adv	
S11	VH	VH	mod	mod	LA	LA	VH	VH	Min	Neg	Mod	Min	Mod Adv	Slt Adv	Lg Adv	Mod Adv	
S12	VH	H	maj	mod	VLA	LA	VH	H	Maj	Mod	Mod	Min	VLA	LA	Mod Adv	Slt Ben	
S13	VH	H	maj	maj	VLA	VLA	VH	H	Maj	Mod	Maj	Min	VLA	LA	Lg Adv	Slt Ben	
S14	VH	H	maj	maj	VLA	VLA	VH	H	Maj	Mod	Maj	Min	VLA	LA	Lg Adv	Slt Ben	
S15	VH	H	maj	mod	VLA	MA	VH	H	Maj	Min	Min	No chng	VLA	Mod Adv	Slt Adv	Neut	
S16	VH	VH	min	min	Mod A	Mod A	VH	VH	Min	No chn/Ne	Min	Neg	Mod Adv	Neutr	Mod Adv	Slt Adv	
S17	VH	H	maj	maj	VLA	VLA	VH	H	Maj	Maj	Maj	Mod	VLA	VLA	Lg Adv	Mod Adv	
S18	VH	VH	maj	maj	VLA	VLA	VH	VH	Maj	Maj	Maj	Mod	VLA	VLA	Vlg Adv	Lg Adv	
S19	H	H	min	mod	Mod A	Mod A	H	H	Min	Neg	Mod	Min	Mod Adv	Slt Adv	Mod Adv	Slt Adv	
S20	H	H	mod	mod	LA	LA	H	H	Min	Neg	Min	Neg	Mod Adv	Slt Adv	Mod Adv	Slt Adv	
S20a	H	H	maj	maj	LA	LA	H	H	Mod	Min	Mod	Min	Mod Adv	Mod Adv	Mod Adv	Slt Adv	
S21*	H	H		min		Slt Adv	H	H			Min	Neg			Slt Adv	Slt Adv	
S22*	L	L		mod		Slt Adv	L	L			Min	Neg			Slt Adv	Neut	
S26*	H	H		no ch		Neut	H	H			No ch	No ch			Neut	Neut	
S29	VH	H	maj	maj	VLA	VLA	VH	H	Min	Neg	Min	Min	Mod Adv	Slt Adv	Slt Adv	Slt Adv	
S30	Mod	Mod	maj	maj	LA	LA	Mod	Mod	Mod	Min	Mod	Min	Mod Adv	Slt Adv	Mod Adv	Slt Adv	
S32	VH	Mod	maj	maj	VLA	LA	VH	Mod	Mod	Min	Min	Min	Lg Adv	Mod Adv	Slt Adv	Slt Adv	
S35	Low	Low	maj	maj	Mod A	Mod A	Low	Low	?	?	Mod	Neg	?	?	Slt Adv	Neut	
/S36*		Mod						Mod			Neg	Neg			Slt Adv	Neut	
S37	H	H	mod	mod	Mod A	Mod A	H	H	Min	Neg	?	?	Slt Adv	Slt Adv	?	?	
S38a	H	H	mod	Mod	Mod A	Slt Adv	H	H			Min	Min			Slt Adv	Slt Adv	
S38b*	H	H					H	H			Neg	Neg			Slt Adv	Slt Adv	
S39	H	H	Mod-min	Min	MA-Slight	Slt Adv	H	H			Neg	Neg			Slt Adv	Slt Adv	

Rep Viewpoints in 2020 and excluded from project assessment in 'construction' category in 2022																	
S23	L	n/a															
S24	VH	Mod	Maj	-	VLA	-		VH	Mod			Maj	Maj			LA	LA
S25	Mod	Mod	Maj	-	LA	-		Mod	Mod			Maj	Min			LA	Slt Adv
S27	VH	Mod	Maj	-	VLA	-		VH	Mod			Maj	Mod			LA	MA
S28	VH	Mod	Maj	-	VLA	-		VH	Mod			Mod	Mod			MA	Mod Adv
S31	H	Mod	Maj	-	LA	-		H	Mod			Mod	Min			MA	Slt Adv
S33	Mod	Mod	Maj	-	LA	-		Mod	Mod			Mod	Min			MA	Slt Adv
S34	VH	Mod	Mod	-	LA	-		VH	Mod			Min	Neg			Slt Adv	Slt Adv

Totals	All	
Sensitivity	2020	2022
VH	22	7
H	10	20
Mod	5	12
Low	1	1
	38	40

	All	
	2020	2022
VH	22	7
H	10	20
Mod	5	12
Low	1	1
	38	40

	Top of table only	
Magnitud	2020	2022
Maj	14	11
Mod	6	12
Mod-min	2	0
Min	2	3
Negl	0	3
No chn/ne	0	0
	24	29

	Top of table only			
	Open	15 Yrs	Open	15 Yrs
Maj	9	5	6	0
Mod	3	5	9	5
Mod-min	0	0	0	0
Min	6	4	8	12
Neg	0	5	4	9
No chn/ne	0	1	0	0
	18	20	27	26

	Top of table only	
Significan	2020	2022
VLA	12	7
LA	6	9
MA	0	2
Mod A	5	4
Slt Adv	0	5
No ch	0	0
	23	27

	Top of table only			
	Open	15 Yrs	Open	15 Yrs
VLA	10	6	0	0
Lg Adv	2	1	6	1
Mod adv	7	3	9	5
Min	0	0	0	0
Slt adv	0	0	11	8
Neut	0	0	3	7
LA	0	3	0	0
	19	10	29	21

7.12 Comments on LVIA overall

7.12.1 The applicant has identified significant effects to the KDAONB and its setting including:

- (i) Significant effects to the West Kent Downs LLCA during construction and operation, and a significant residual effect which will be permanent, as a result of the increased visibility of highway infrastructure and traffic, and reduced wooded enclosure;
- (ii) Construction works for the A2/A122 junction, and the Southern Tunnel entrance compound will result in significant effects to the setting of the KDAONB from south of the A2, to the eastern edges of Gravesend and Chalk, and west of Thong village, and a significant residual effect for the area around Thong which will be permanent;
- (iii) Significant visual effects in the KDAONB and its setting during construction and operation; and significant visual effects which will be permanent. These include recreational users on public Rights of Way in the KDAONB, and notably views from PROW at bridges over or close to the A2 widened road corridor.
- (iv) Our response: There are a number of viewpoints assessed as not Significant at Design Year, which we consider should be assessed as Significant and therefore permanent adverse effects. The applicant is requested to review the visual assessment of Representative Viewpoints in this respect.
- (v) As required by the guidance (DMRB LA 107) the applicant has combined the landscape and visual assessments into a single conclusion. For the area of the project within Gravesham, the applicant concludes that Large and Very Large adverse effects will be localised, due to the effects of mitigation measures, and overall the adverse effect would be 'Moderate Adverse' and therefore considered to be Significant.
- (vi) Our response: 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.

7.13 Views from the Road Assessment – Analysis and Comments

7.13.1 Other assessments relevant to landscape include the View from the Road Assessment at LTC doc 6.3 ES Appx 7.13 – Views from the Road Assessment. The document addresses the assessment of views likely to be experienced by drivers on the Project road. It is understood this does not assess the effects on existing views from surrounding roads, as these are assessed separately (Document 6.3 Chapter 7) However, the assessments share the same guidance (ie DMRB LA 107).

7.13.2 There are three VPs (viewpoints) within the Gravesham area; VP1, VP2 and VP3.

7.13.3 1.3.14 – Susceptibility section states ‘The view is the backdrop to activity on the road and has a degree of importance. The road user’s susceptibility to the change of the view is considered to be low throughout the Project.’

7.13.4 **VP 1:**

- (i) 1.6.2 – 1.6.6 Existing landscape and view (page 11) states ‘...the user experience both eastbound and westbound is one of enclosure, passing through woodland....’ And ‘For eastbound travellers, the horizon is densely wooded, compounding the impression of passing through expansive woodland.’
- (ii) The Landscape of Kent Assessment (2004 by Jacobs Babbie) - Shorne LLCA – Landscape Analysis: Sensitivity - says ‘Views are generally enclosed due to the high proportion of woodland in the landscape’. The Landscape Analysis: Sensitivity for Cobham – West Kent Downs states ‘Visibility is low...’
- (iii) The Kent Downs AONB Landscape Character Assessment (2020) supports this point, stating (at 2.2.11) ‘The Ancient Woodlands....’ ‘... generate a strong sense of enclosure’.
- (iv) In addition, the Value assessment (at 1.6.7) states that ‘...views from the road are dominated by the road infrastructure itself and do not reflect the special qualities associated with the landscape designation.’
- (v) Our comments on the above: 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)
- (vi) This wooded landscape is characteristic of the AONB in this area, and the change of view is very apparent to drivers. There is surrounding dense tree cover provided by both the woodland to the north (for east-bound drivers) the woodland planting along the HS1 route (for west-bound drivers), and for all drivers, the wooded central reservation. These areas of planting reduce the apparent width of the carriageway, and the central reservation gives a good degree of separation.
- (vii) 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)
- (viii) 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.

- (ix) 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.
- (x) 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)
- (xi) Having considered the above points, the overall significance of the effect of the proposed development during 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'.

7.13.5 VP 2:

- (i) Although this viewpoint lies just outside the KDAONB, for eastbound drivers the view is of a wooded backdrop and skyline, and of a designated landscape of national importance.
- (ii) The change in view as a result of the proposed major - and complex - road junction at this location would be to radically alter not only the scale of the infrastructure, but also the nature of the type of infrastructure. The new junction, with its multiple lanes of traffic and multi-levelled roadways, high level bridges and retaining walls, and bigger gantries would completely dominate the view.
- (iii) In addition, the construction compound and earthworks would combine to exacerbate these changes during the construction phase and for the opening year at least.
- (iv) Given this scale of change, the assessment for susceptibility should be higher than that stated, thereby increasing the sensitivity assessment to at least 'Moderate'.
- (v) Further, the magnitude of change should be reassessed as 'Major Adverse' for the above reasons (ie '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)
- (vi) 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.
- (vii) 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'.

7.13.6 VP 3: The southern tunnel portal.

- (i) 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'*.
- (ii) The Landscape Institute's Technical Information Note 01/21 'GLVIA webinar Q&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.
- (iii) 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'*.
- (iv) 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)
- (v) 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.

7.14 Mitigation

7.14.1 In order to reduce adverse effects on the landscape and visual amenity, the proposal includes a range of mitigation measures. These include measures built-in to the project (Embedded Mitigation), and other measures (Essential Mitigation) which aim to reduce or offset environmental impacts of the proposal. These measures (document 6.2 Figure 2.4 Environmental Masterplan) are intended to help screen views, integrate the Project into the landscape, and replace planting lost as a result of the works. The measures include replacement vegetation, providing green bridges to 'maintain landscape continuity across the Project route' (doc 6.1 Ch 7 section 7.9.1), false cuttings, woodland planting, plus trees and hedgerow planting.

7.14.2 LTC document 6.1 Ch7 sets out proposals for mitigation during the phases of the project. These include returning working areas to landowners (where the land is not required for environmental mitigation), reinstatement of land to its original use 'as far as technically possible' (ref doc 6.1 Ch7) and reducing loss of existing vegetation. The mitigation measures draw on the project Design Principles (LTC document 7.5)

7.14.3 LTC document 6.3 Appendix 2.2 – Code of Construction Practice, First Iteration of Environmental Management Plan sets out a framework for how the mitigation and management of environmental effects will be delivered and maintained. This document includes the REAC (Register of Environmental Actions and Commitments) which sets out mitigation measures.

7.14.4 Our response:

- (i) The development of mitigation measures is welcomed in principle. However, the overriding issue is whether the landscape has the capacity to accommodate the project.
- (ii) The re-establishment of the landscape is crucial. Working areas required for the project should be vacated at the earliest possible opportunity, and as a priority, in order that environmental mitigation operations may take place and planted areas be established as soon as possible.
- (iii) It is understood that detailed planting plans will be developed at a later stage through a detailed LEMP, building on the existing oLEMP (LTC document 6.7) However, native planting should be used wherever possible. It is unclear why non-native planting has been proposed eg 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.
- (iv) 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.
- (v) GLVIA3 Section 4.26 Re Mitigation states: *'...measures that are simply added on to a scheme as 'cosmetic' landscape works, such as screen planting designed to reduce the negative effects of an otherwise fixed scheme design, are the least desirable.'*
- (vi) LTC doc 6.1 Ch 7 refers to screen planting, and states heights of planting at Design Year (15 yrs) to be:
 - a. 4.5m to 6m in height for oak and sweet chestnut;
 - b. 6m to 10m for other trees;
 - c. 3m for shrubs and scrub;
 - d. 2.5m for managed hedgerows
- (vii) It is considered that the project has an over-reliance on planting to provide effective screening by the Design Year (within 15 years);
- (viii) The stated rates of plant growth will depend on a range of factors, eg size at time of planting, density of planting, soils, maintenance and watering regime.
- (ix) 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.
- (x) 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; Eg 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: *'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.'*

- (xi) 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: *'The establishment of replacement tree and shrub planting at the Gravesend East junction and an extensive new linear tree and shrub belt 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.'*

7.14.5 Proposed Ancient Woodland and Nitrogen Deposition Compensation (NDep) Sites

- (i) The proposal will remove important habitat, including Ancient Woodland.
- (ii) Ancient woodland is an irreplaceable resource. GLVIA3 Section 4.33 states *'...loss of an area of ancient woodland cannot, by definition, be compensated for other than in timescales extending over generations. Therefore, offsetting and compensation should generally be regarded as measures of last resort.'*
- (iii) LTC Document 6.3 Environmental Statement Appendix 7.14 – Landscape and Visual Legislation and Policy, Table 1.2 National Policy Framework and the Project Response, references NPSNN (DoT 2014) Paragraph 5.32 *'Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of the development, in that location, clearly outweigh the loss.'*
- (iv) Areas of Ancient Woodland will be lost from the landscape of the KDAONB. The applicant states they have considered the loss of Ancient Woodland as part of the planning balance of the project, and proposes new sites for the planting of woodland as compensation for the Ancient Woodland lost.

7.14.6 Our response:

- (i) 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.
- (ii) 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)
- (iii) 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.

- (iv) The need for a comprehensive mitigation strategy:
- (v) Mitigation should not disrupt or change the character of the landscape.
- (vi) 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.
- (vii) A Mitigation Strategy (which may extend beyond the scope of works associated with the road scheme) could:-
 - a. take a strategic approach to the whole landscape to be affected and the wider impacts;
 - 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;
 - c. help to address the severance of the protected landscape;
 - d. address the loss of local amenity use to adjoining populations;
 - e. address the severance and diversion of access routes, and the qualitative impacts on users (receptors);
 - f. target areas that will help reconnect and strengthen habitats, the setting of heritage features and enhance landscape character;
 - g. maintain and enhance long views and local views; to include long views to and across the Thames and from the Kent Downs;
 - h. make links with other topics affected by this proposal, including biodiversity, cultural heritage, and public access;
 - 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;
 - j. Support the investment needed for infrastructure in the Green Network;
 - k. contribute to modal shift and promote sustainable transport in the area;
 - l. address the needs of cyclists and pedestrians;
 - m. have the potential to address local deficits of open space and recreational facilities identified by Gravesham Borough Council.

7.15 Area-specific and cross-cutting issues

7.15.1 Green Bridges

- (i) As part of a list of embedded mitigation measures, the proposals include plans for three green bridges to the south of the River Thames; at Brewers Road and Thong Lane south, where they will replace existing bridges over the widened A2/M2 corridor; and at Thong Lane north, where there will be a new bridge (a Project Enhanced Structure) on the line of the new A122 LTC.
- (ii) Comments have been made in previous iterations of the LTC consultation, regarding the importance of maximising the potential benefits of green bridges. In particular, how opportunities should be sought to develop green bridges where they might provide 'gateways' into the KDAONB, as well as functioning ecological and landscape corridors. This is particularly important along the A2/M2/HS1 corridor, where the proposal will greatly increase the real and apparent severance of the KDAONB, in the short and longer term.
- (iii) The proposal sets out plans for three green bridges to the south of the River Thames; at Brewers Road and Thong Lane south, where they will replace existing bridges over the widened A2/M2 corridor; and at Thong Lane north, where there will be a new bridge (a Project Enhanced Structure) on the line of the new A122 LTC.
- (iv) The need for green bridges across the widened A2/M2 corridor is supported by the proposal documents. The proposal states (ref LTC doc 7.4 Part F: 3.3.18) *'Bridges located within the rich landscape of the Kent Downs AONB will form a key gateway to the Project route from the south where the A2/M2 joins the alignment. The proposed structures and landscape between will also act together to perform as landmarks signalling entry through the Kent Downs AONB.'*
- (v) Also, at 3.3.25. *'Some of these structures also restore previously broken links across the landscape...'*
- (vi) The Landscape Institute has published advice on best practice in Green Bridge Design ref Landscape Institute – Guidance on Designing Green Bridges (2015) at <https://www.landscapeinstitute.org/wp-content/uploads/2018/01/tgn-09-2015-green-bridges.pdf>
- (vii) The Landscape Institute advice draws on a Natural England Commissioned Report 'NECR181 Green Bridges - A literature review' First published 27 July 2015.
- (viii) These two documents provide useful benchmarks and comparators, and identify inter alia, the importance of appropriate width, depth and gradients of green bridges.
- (ix) In particular the NE report states: *Width and length: 4.10 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.*
- (x) Design principles for the proposed green bridges are set out in LTC Document 7.5 Table 5.1. The Brewers Road and Thong Lane south green bridges share the same design principles, including acting as local landmarks to signal entry

into the KDOANB, to provide a high-quality experience for users of the bridges, and to have sufficient soil depth to establish shrubs and trees.

- (xi) The scheme proposes higher design standards for the Thong Lane north green bridge when compared with the two bridges over the widened A2/M2. For example, the Thong Lane north green bridge has wider and more extensive areas of planting and better WCH path provision. The Thong Lane north Design Principles, include connecting woodland habitat, lessening the visual impact of the M2/A2/A122 Lower Thames Crossing junction, enhancing the user experience and maintaining east-west connectivity between Gravesend and Thong/Shorne Woods Country Park, connecting woodland to the east and west to provide a habitat corridor for mammals, as well as providing off-road routes for WCH users away from the main road, and providing crossings. The design principle also includes the requirement to 'make people feel safe' when crossing the bridge. The soil depth should be sufficient to establish woodland species, and reflect the species make-up of the KDAONB.
- (xii) In addition, Tables 5.1, 5.2 and 5.3 in LTC document 7.5 set out the minimum widths of elements on the green bridges. These are summarised here for comparison at Table 7.4.
- (xiii) The widths set out for Brewers Road and Thong Lane south green bridges fall below the recommendations in the L.I./N.E. guidance, and therefore would not be suitable for bridges providing the required range of functions. By contrast to the green bridges over the widened A2 corridor, the Design Principle set out for the Thong Lane north green bridge (Project Enhanced Structure – LTC doc 7.5 Table 5.1: S3.18) provides far more generous areas in terms of planting and WCH routes (see Table 7.4). However, it is unclear as to whether the Thong Lane north green bridge will meet the standard recommended in the guidance.

7.15.2 The proposals for the three bridges and our response in more detail:

7.15.2.1 **Brewers Road Green Bridge**

- (i) The green bridge would be constructed on the line of the existing Brewers Road bridge. The loss of woodland planting to the north and south of the A2/M2 and the important central reservation, together with a much-widened road, would greatly increase the severance of the KDAONB. The proposed green bridge would provide a link for vehicles and WCH users from the KDAONB to the south to Shorne Woods Country Park in the north.
- (ii) Doc 7.4 Part D General Design South of the River – Section 4.5.7 states the Brewers Road green bridge provides *'the opportunity to complete the green link from habitats north and south of the transport corridor'*. However, document 7.4 Part F describes the proposed green bridge over the A2 at Brewers Road...as being *'independent of the HS1 bridge.. ...limiting the potential value of an ecological connection across the transport corridor...'*
- (iii) Doc 2.13 Volume B (sheets 12 to 79) at Sheet 20 provides a plan of the bridge structure. It is shown without dimensions, but it is clear that there will be a very narrow strip of vegetation on one side, and a wider strip to the other – presumed east – side (see extract at Appendix 1)

- (iv) The widths for planting set out in Document 7.5 Design Principles at Table 5.1 provides minimum widths for the Brewers Road green bridge.

7.16.3.2 Thong Lane south Green Bridge

- (i) The proposals provide a drawing of the proposed bridge in Document 2.13 Volume B (sheets 12 to 79) at sheet 21 (see extract at Appendix 1). The drawing does not provide any dimensions, but – similar to the Brewers Road bridge – there is significant width of planting on only one side of the bridge. This bridge crosses multiple lanes of traffic, and is surrounded by hard surfaces, walls and other large structures. In addition, it is located close to the new junction of the A2/A122, with its multiple levels and structures. The experience for WCH users of the bridge will not be pleasant, as they will experience the noise and views of traffic and a more urbanised and open landscape.
- (ii) LTC document 7.4 Part F provides a summary description of the proposed green bridge and mentions the bridge piers, and other proposed structures at the Thong Lane/A2 junction, including retaining walls and barriers. But the structures are not described in any detail. Sections are provided at a very small scale, so it is not possible to understand how the structures will appear in the landscape, or the context of the surrounding road with its new structures. The illustration of the new bridge is another aerial view, which provides little detail or idea of the vertical scale or mass of the proposal.

7.16.3.3 Thong Lane north Green Bridge

- (i) By contrast, the design of the Thong Lane north bridge, shown in drawings in LTC document 2.13 Volume B (sheets 12 to 79) sheet 26 (see extract at Appendix 1), has two dedicated paths for WCH users, separated from the roadway and enclosed by a total of four widths of planting. The bridge users will be screened from the new A122 below, which will have far fewer lanes of traffic than the modified A2 and its linking roads.
- (ii) Details of the proposed structures are not referenced in Document 2.13 Volume B, but are found in separate documents; LTC doc 2.9 Vol C, doc 2.9 Vol D and doc 2.13 Volume B (sheets 12 to 79) NB It is not easy to find details of proposed structures in the suite of documents. The only details are to be found on the engineering drawings, and these do not provide dimensions.
- (iii) LTC document 7.4 Project Design Report Part E provides an aerial image of the access routes around and including Thong Lane bridge south. The access routes which lead from the south side of the bridge appear particularly exposed to surrounding roads and traffic, in an urbanised landscape.
- (iv) Our response:
 - a. The proposed green bridges at Brewers Road and Thong Lane south are both crucial at their locations, providing gateways into the KDAONB, and helping to reduce the impacts of the widened A2 corridor and new road junction. The proximity of the Thong Lane south green bridge to the proposed A2/A122 junction provides an opportunity for an environmental response that might match the scale and mass of the proposed junction - albeit that the junction cannot be accommodated into the landscape without significant and permanent changes to landscape character and visual amenity. The proposed woodland planting around the junction will, in

time, help to blur the edges and soften the appearance of some of the elements of the junction. However, even at maturity the planting would not achieve adequate screening to match the scale of change to the landscape. There are few options available, but a green bridge of very large scale at this location could help provide screening across the transport corridor, reducing the visual impact of the junction, and providing some enhancement to this important area on the edge of the KDAONB. In addition, the Brewers Road bridge and the Thong Lane south bridge should be designed such that they join up with the existing habitats to the north and south of the widened A2 corridor, and make use of existing links across HS1 wherever possible.

- b. Overall, the designs for the proposed green bridges at Brewers Road and Thong Lane south will not be adequate for the bridges to function as needed. Notably, the bridges need to be broader, and provide wider tracts of vegetation on both sides of the bridge and on either side of the WCH route to ensure that recreational users are less exposed to the views and noise of the widened road. The bridges cannot compensate for the significantly increased severance, loss of landscape quality, biodiversity and visual amenity along this transport corridor. However, by providing the maximum possible width and depth, the green bridges may be able to provide functioning ecological and landscape links, as well as an improved experience for users.
- c. In the absence of avoidance, green bridges are the most important elements that will help mitigate the impacts of the proposed development along the widened A2 road corridor and the significantly increased actual and perceptual severance of the landscape. Well-designed green bridges can provide connectivity for habitats, landscape and recreation, and provide the scale of response needed to the scale of environmental impact proposed. However, more needs to be done to reduce some of the negative impacts of the LTC scheme.

7.15.3 In summary:

- (i) 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.
- (ii) The provision of green bridges to improve connectivity is to be welcomed. However, the experience could be improved by better design.
- (iii) 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.
- (iv) 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.
- (v) All proposed green bridges should at least meet the recommended standards in the L.I./N.E. Guidance.

- (vi) Given the impacts along the A2/M2 corridor and to the KDAONB and its setting, the proposed green bridges over the A2/M2 should:
 - i. Be exemplars, of the highest quality, in design and construction;
 - ii. Provide a key role in helping to reduce the real and apparent severance of the KDAONB;
 - iii. Provide essential mitigation to help reduce the real and apparent landscape and visual impacts of the A2/LTC junction;
 - iv. Perform the role of gateways into the KDAONB;
 - v. Be considered as Project Enhanced Structures;
- (vii) All proposed green bridges should provide:
 - i. Functioning ecological corridors;
 - ii. Landscape connections;
 - 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;
- (viii) 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.

7.15.4 There are further opportunities within the A2/M2 corridor, to the east of the Brewers Road green bridge, to develop the existing Park Pale bridge to create another 'gateway' green bridge to the KDAONB. It is understood that the Brewers Road bridge cannot be developed in such a way, for technical reasons, however it is considered that the Park Pale bridge should be considered as a priority.

Table 7.4

Comparison of proposed Green Bridges – text from Doc 7.5 Design Principles		
(Table 5.1: S1.17) Brewers Road	(Table 5.2: S2.12) Thong Lane south	(Table 5.2: S2.04 and Table 5.3: S3.18) Thong Lane north
A 10m planting zone on the east;	A 20m planting zone on the west	The planting green zones shall be maximised. Their width shall vary across the length of the bridge but shall have a 7m minimum width at pinch points. The WCH routes may be located within the planting zones.
A 1.5m planting zone on the west;	A 1.5m planting zone on the east	WCH provision on the west side within the planting zone, comprising a 3m shared pedestrian/cycle route and a 3.5m horse riding route.
WCH provision, comprising a 3m shared pedestrian/cycle route and a 3.5m horse-riding route.	WCH provision, comprising a 3m shared pedestrian/cycle route and a 3.5m horse riding route	WCH provision on the east side within the planting zone, comprising a 3m shared pedestrian/cycle route and a 3.5m horse riding route.
		WCH provision on the east side within the planting zone, comprising a 3m

		<p>shared pedestrian/cycle route and a 3.5m horse riding route.</p> <p>A WCH crossing shall be provided on the bridge between the east and west WCH routes.</p>
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See Appendix A for images of the three images of the green bridges from the engineering drawings

7.15.5 Widened A2 road corridor: Our comments

- (i) 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.
- (ii) 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.
- (iii) 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.
- (iv) 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.

7.15.6 Junction of the A2 and the A122: Our comments

- (i) 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.

- (ii) Visual imagery is essential in helping to convey the scale, mass and complexity of the junction, as well as the impact on the landscape. The aerial views provided showing the proposed junction are flattened-out and not helpful, and there are no photomontages provided from viewpoints looking towards the new junction.
- (iii) We have seen drafts of additional information which are not yet part of the application documentation, and which we are still digesting. The information comprises long sections across the proposed A2/A122 junction, and they are helping to expand on other material within the documents. The sections illustrate the relative heights and masses of the elements of the new junction and its linking roads. A combination of cuttings, embankments, flyovers and very tall retaining walls are shown, in the context of swathes of stripped-out woodland and other planting, opening up a wide gap in the landscape, and changing the landscape character including the important wooded backdrop (LTC document 6.2 Figure 7.24 – Tree Removal and Retention Plan Maps 4 and 9 of 51 illustrate the extent of proposed tree removal around the junction)
- (iv) The drawings are helpful in setting out the ground levels and relative heights of elements of the junction. Unfortunately they do not provide heights or show the scene or background behind the section line. However, the inclusion of trees and people into the section drawings provides some context, and help to convey the enormous scale of the proposed junction, and the scale of change to the landscape. (See also section 7.16 Visual Imagery)

7.15.7 Park Pale area: Our comments

- (i) The Park Pale area is situated within the A2 corridor and the KDAONB, and includes a public Right of Way, open land north of the A2 between Great Crabbles Wood and Brewers Wood, commercial activities at the Harlex compound and access road, the Park Pale bridge over the A2 and roads linking to the bridge.
- (ii) 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:
 - 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;
 - The proposed attenuation basin (works) and maintenance access to the east of the Harlex compound;
 - Utilities works along the A2/M2, ULW16 and gas main works;
 - 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;

- Widened roadways, and increased number of lanes, unrelieved by planting;
 - Greater visibility of HS1 in the medium-term;
- (iii) All the above will exacerbate the severance of the KDAONB and introducing a significantly more urban character to this area (of the KDAONB)
- (iv) Ancient Woodland compensation planting: In addition, document 7.5 Table 5.1 sets out design principles for the scheme. It states: *'New woodland east of Shorne Woods Country Park shall be provided to link Shorne Woods with Great Crabbles Wood. The design shall be developed through collaboration and engagement with Shorne Woods Country Park, Natural England, Kent Downs AONB and relevant local stakeholders, subject to their requirements being compatible with mitigation requirements as defined in the Environmental Masterplan (Application Document 6.2, Figure 2.4). Defensive understorey planting shall be planted to the boundary of adjacent private land to prevent public access. The design of woodland shall retain key views from the upper slopes of the new woodland across to the Darnley Mausoleum and views to the wider Kent Downs AONB.'*
- (v) The design principle is welcomed, as it is considered important that planting of woodland across this area may not be the most type of landscape cover, and may have the negative effect of blocking key views to and from the KDAONB. This landscape is currently open, and while the planting of replacement woodland is to be welcomed, it is suggested that there be a gradation of planting to provide a woodland link in the east, to woodland/parkland mosaic in the west. It will be important to ensure that the planting plans for this area are discussed with and agreed by the KDAONB and Natural England.
- (vi) 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.

7.15.8 Area east of Thong Village

- (i) This 13Ha area of Grade 2 agricultural land is located in the south-east of the Higham Arable Farmlands LCA where it meets Shorne Wooded Slopes LCA. The Gravesham Landscape Character Assessment (2009) describes this largely open landscape, its gently undulating landform, agricultural heritage and long views. The assessment guidelines for the Character Area include restoring field boundary hedgerows, restoring and creating ecological networks by linking existing isolated woodland clumps, and the creation of areas of regenerative woodland within farmland to create woodland links.
- (ii) The project proposes the creation of open mosaic habitat with ecological ponds on this land, to provide suitable habitat for the translocation of species including amphibians and reptiles (see document 6.7 OLEMP 5.9) The site is currently open scrubby grassland, but was previously grazing land with paddocks. There is a PROW running east-west across the site, connecting Thong Village to Shorne Woods Country Park. The access route is well-used and currently enables open access to the site.
- (iii) Our response: 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.

7.15.9 Chalk Park and the Southern Tunnel Portal

- (i) The documents set out proposals for a new recreational site of over 35 hectares to the west of the south portal on Green Belt land to the west of the urban area of Gravesend.
- (ii) LTC document 7.5 Design Principles Section 5.3 Table 5.3 lists, inter alia, the principles to be applied to the development of Chalk Park (Clause no. S3.04).
- (iii) The document states that excavated material from the cutting (for the A122 approach road) is to be used to *'integrate the open space into the existing topography'* and *'A wooded hilltop shall be provided in a manner characteristic of the setting of nearby settlements at Thong and Shorne to soften the exposed urban edge of Gravesend'*.
- (iv) The Design Principles for the Gravesend Link and South Portal also include the retention of long views across the landscape north of Thong Lane.
- (v) Clause no. S3.06 from the above document references the proposed cascading infiltration basins adjacent to the South portal. The basins are described as naturalistic, and their purpose is stated to be the enhancement of the landscape character around the area of the South Portal.
- (vi) Our response:
 - 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.

- b. 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.
- c. The infiltration basins are engineered structures, and it is considered that they are unlikely to look 'naturalistic' in the open landscape.

7.16 Visual imagery

7.16.1 Photomontages

- (i) 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:
 - 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.
 - 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.
 - 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;
 - 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.

7.16.2 Other visual information

- (i) The documents provide a range of illustrations to convey the proposals. However, in a number of areas the illustrations are either missing, stylised, or presented as engineering drawings for technical uses. For example, the watercolour-style illustrations in document 7.4 Project Design Report Part D, including those on pages 46 and 47, which aim to show cross sections through the proposed A2/A122 junction and Thong Village. These are presented in a way that makes interpretation difficult, and at a scale so small that detail and context cannot be seen. Plans and profiles found in documents 2.9 Vol D, 2.9 Vol C and 2.13 Vol B (sheets 12 to 79), are presented as technical drawings and as such are not useful to understand how the scheme will appear.
- (ii) Aerial photo images - in particular the A2/A122 junction and Thong Lane/A2 bridge and interface - are presented from an oblique angle, at a very small scale, thereby flattening-out the height differences across the junction, and making it impossible to appreciate the height, mass and scale of the proposed

structures, and how they will 'sit' in the landscape e.g. document 7.4 Project Design Report Part D Page 37.

- (iii) 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.
- (iv) However, as stated above (Junction of the A2 and the A122) we have seen drafts of additional information which are not yet part of the application documentation, but which are proving very useful in helping to explain the proposals at the new A2/A122 junction.

7.17 Key issues of concern - Summary

- (i) Changes made to the LVIA since 2020 and their impact;
- (ii) Underassessment of residual adverse effects in the LVIA;
- (iii) A piecemeal approach to assessment is unhelpful in ensuring the quality of the landscape overall;
- (iv) The capacity of the landscape to accommodate the proposals;
- (v) The piecemeal approach to the issue of integrating the scheme into the landscape;
- (vi) Under-estimation of the significant role of the existing wooded corridor along the A2/HS1 in strengthening landscape character, including the important wooded central reservation of the A2;
- (vii) Continued lack of useful visual imagery to help interpret the proposals;
- (viii) Increased urbanisation and changed character of the landscape of the KDAONB;
- (ix) The permanent adverse effects of the scheme along the widened A2 transport and infrastructure corridor, including increased severance of the KDAONB;
- (x) Failure to recognise the essential role of the proposed Green Bridges over the widened A2, and act to upgrade their design;
- (xi) Irreplaceable loss of Ancient Woodland;
- (xii) The in-combination effects on key areas:
- (xiii) The scale of the proposal, the heights and mass of permanent structures, and the totality of their impacts;
- (xiv) Over-reliance on planting as mitigation to effectively screen the development;
- (xv) The impacts on public access;
- (xvi) The potential in-combination effects of additional lighting sources;
- (xvii) The in-combination visual effects of construction compounds and their operations;

7.18 Conclusions

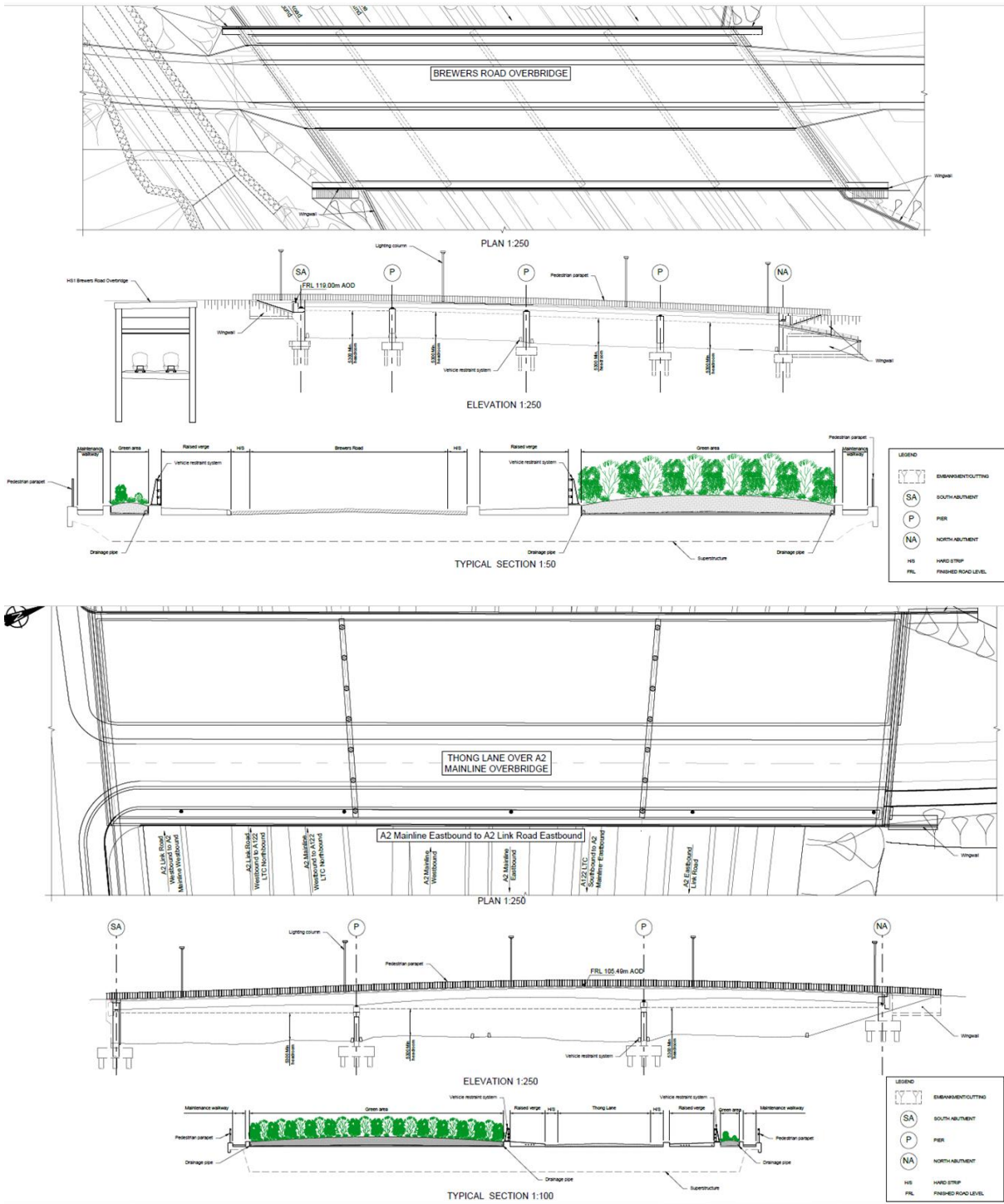
- (i) The proposed scheme cannot be accommodated into the landscape as currently proposed without significant loss of landscape - and historic landscape – character. Gravesham Borough Council has called for a reappraisal of the landscape by LTC, and for a strategic masterplanning approach;
- (ii) The selection of the LTC route has serious implications for the KDAONB;
- (iii) The proposals are likely to result in significant changes to the landscape, with degraded quality of the landscape overall, at least in the short to medium-term;
- (iv) The choice of route means that new elements of transport infrastructure are to be introduced into a protected landscape and its setting;
- (v) The scale and totality of environmental effects should be considered and reviewed together;
- (vi) The proposed scheme will have significant impacts on the access network at all stages of the development, directly impacting on visitors and local users;
- (vii) The scheme relies too heavily on screen (mitigation) planting;
- (viii) A mitigation strategy is vital to ensure that a comprehensive and cross-cutting approach is taken that will recognise the special qualities and character of the component areas, and deal with the difficult issue of phasing works and limiting the landscape and visual effects throughout the process;
- (ix) Landscape reinstatement should have high priority and the need for the early reinstatement of (public) access;
- (x) The need for 3D modelling and better illustrative material
- (xi) Legacy issues should be built in to the mitigation strategy e.g. the connectivity of access across the KDAONB and Green Belt

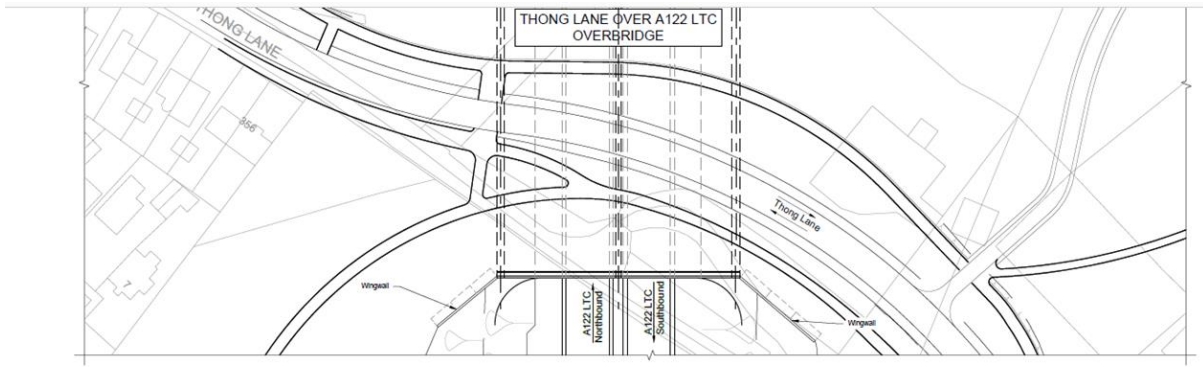
7.19 Our asks

- (i) The need for a comprehensive and far-reaching Mitigation Strategy;
- (ii) The need for a reappraisal of the overall effects on the landscape;
- (iii) Embedded mitigation proposals to include upgraded Green Bridges over the A2, as Project Enhanced Structures and to provide Gateways into the KDAONB;
- (iv) The consideration of additional mitigation/compensation areas and landscape improvements;
- (v) Better visual imagery, including 3D modelling and in-context images and sections, including measurements;

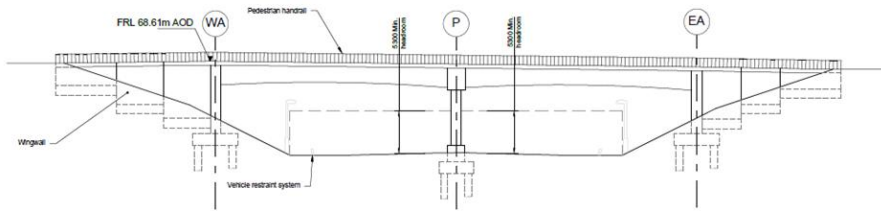
Appendix 1

Green Bridge cross sections

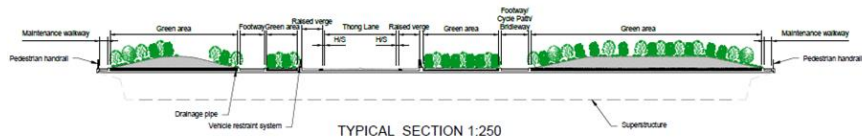




PLAN 1:500



ELEVATION 1:250



TYPICAL SECTION 1:250