

# **Lower Thames Crossing**

9.172 Applicant's response to ExQ2\_Q13.1.3 - Green Belt Harm Assessment

Infrastructure Planning (Examination Procedure) Rules 2010

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## 1 Introduction

### 1.1 Introduction

- 1.1.1 This assessment has been provided in response to the Examining Authority's ExQ2 Q13.1.3 which requests the Applicant to provide "a more detailed assessment of the Project against the purposes for including land in the Green Belt and the impact on openness of the Green Belt" in order for the ExA to be able to establish the extent of harm caused.
- 1.1.2 The Applicant provided a response to ExQ2 Q13.1.2 in Deadline 6 Submission 9.152 Responses to the Examining Authority's ExQ2 Appendix I 13 Social, Economic & Land-Use Considerations [REP6-116] relating to 'appropriateness' and the elements of the Project that could individually be considered to not represent inappropriate development in the Green Belt. That response supplemented section E.5 of Appendix E of the Planning Statement [APP-500].
- 1.1.3 As explained in response to ExQ Q13.1.2 in Deadline 6 Submission 9.152 Responses to the Examining Authority's ExQ2 Appendix I 13 Social, Economic & Land-Use Considerations [REP6-116] the Applicant remains of the view that, whilst individual elements meet the policy exemptions, the Project as a whole represents inappropriate development in the Green Belt. The assessment of very special circumstances has been undertaken on that basis to represent a precautionary 'worst case' assessment. That assessment is presented at section E.8 of Appendix E of the Planning Statement.
- 1.1.4 This document does not repeat the relevant policy and guidance on Green Belt set out in Appendix E of the Planning Statement [APP-500]. It supplements, rather than replaces, the assessment of harm presented in section E.6 (Assessment of harm) of Appendix E of the Planning Statement [APP-500] by providing a more detailed assessment of the Project against the purposes for including land in the Green Belt (Section 2) and the impact of the Project on the openness of the Green Belt in (Section 3).
- 1.1.5 The assessment in section E.6 of Appendix E of the Planning Statement [APP-500] already recognises that the impact on the openness of the Green Belt would be significant and this is reflected in the consideration of very special circumstances in section E.8. This report provides more detail on the nature and level of harm. It does not alter the conclusions that very special circumstances exist. There is a clear and overriding need for the Project and there are substantial benefits which would result from the Project which are in the public interest. The need and benefits of the Project and the lack of alternative ways of meeting that need are considerable and outweigh any potential harm to the Green Belt or other any other harm that may be caused by the Project.

# 2 Assessment of Harm to Green Belt Purposes

## 2.1 Green Belt Purposes

- 2.1.1 National Planning Policy Framework (NPPF) (Department for Levelling Up, Housing and Communities (DLUHC), 2023) paragraph 138 states:
  - "Green Belt serves five purposes:
  - a) to check the unrestricted sprawl of large built-up areas;
  - b) to prevent neighbouring towns merging into one another;
  - c) to assist in safeguarding the countryside from encroachment;
  - d) to preserve the setting and special character of historic towns; and
  - e) to assist in urban regeneration, by encouraging the recycling of derelict and other urban land."
- 2.1.2 An assessment of the harm to the Green Belt purposes as a result of the Project is set out in this section.
- 2.1.3 To assist in understanding the meaning of the purposes and how they can be differentiated from each other, the following explanation of the terms has been used by the Applicant as part of the assessment:
  - a. To check the unrestricted sprawl of large built-up areas
    - i. Can be defined as the irregular and unfettered spread of an urban area outwards and includes cities, towns or villages.
  - b. To prevent neighbouring towns merging into one another
    - i. Can be defined as the role that an area plays in preventing towns merging and relates to the proximity of neighbouring towns. This can include the physical or visual linking of settlements or areas of built development, providing a sense of separation when leaving one settlement and entering another.
  - c. To assist in safeguarding the countryside from encroachment
    - i. Encroachment can be defined as the gradual advancement of an urban area beyond an acceptable or established limit of development. It can be characterised as the absence of built development or any urbanising influences within an area.
  - d. To preserve the setting and special character of historic towns
    - i. This aspect relates to the impact of a development on the setting and special character of historic towns.

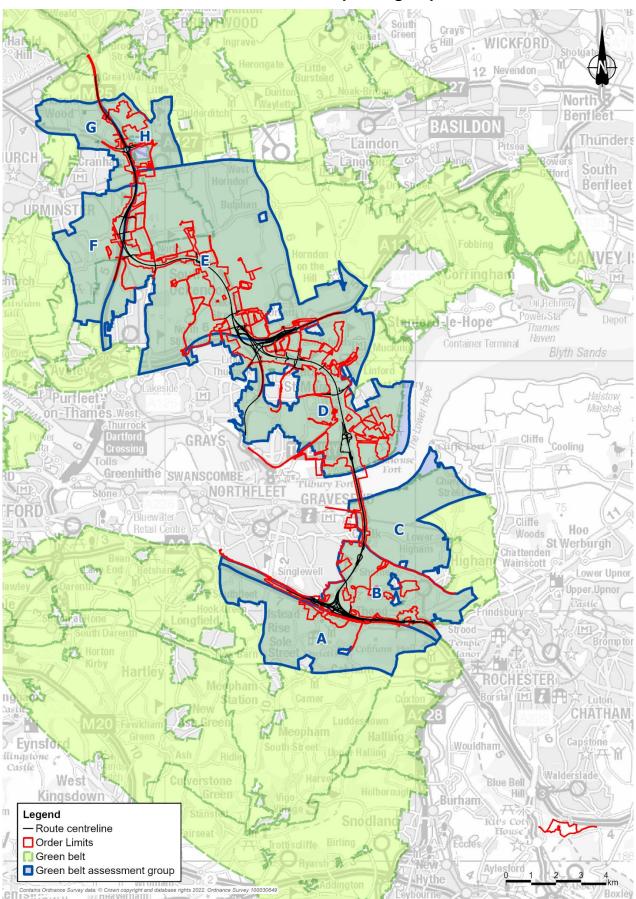
- e. To assist in urban regeneration by encouraging the recycling of derelict and other urban land
  - i. By restricting the availability of land for development all areas of Green Belt effectively assist in urban regeneration by promoting the reuse of derelict and underutilised land within existing settlements. The extent to which each project contributes to regeneration aspirations needs to be assessed.

## 2.2 Assessment methodology

- 2.2.1 In order to assess the impact of the Project on Green Belt purposes and openness, an assessment has been undertaken using groups of Green Belt parcels identified within existing Green Belt studies previously undertaken by the 'host' local authorities, namely:
  - a. Gravesham Green Belt Study, and Stage 2 Green Belt Study (Gravesham Borough Council, 2018 and 2020)
  - b. Thurrock Strategic Green Belt Assessment Stages 1a and 1b (Thurrock Council, 2019)
  - c. Green Belt Study and Sites Assessment (London Borough of Havering 2016 and 2018)
  - d. Green Belt Study Part II and III: Green Belt Parcel Definition and Review (Brentwood Borough Council, 2018)
- 2.2.2 The extent of the Green Belt parcel groups has been informed by the landscape study area described in Environmental Statement (ES) Chapter 7: Landscape and Visual [APP-145] and shown on ES Figure 7.1 [APP-197].
- 2.2.3 This is except for the area north of Warley Road along the M25 corridor at the northern end of the Project, where the proposed works along the M25 are very limited and are unlikely to give rise to harm to the Green Belt purposes or openness as the works are limited to the existing M25 corridor.
- 2.2.4 The Green Belt parcel groups shown on Plate 2.1 below have been determined by identifying strong landscape boundaries such as the HS1, A13 and M25 corridors. Detailed plans of host authority Green Belt parcels and the parcel groups used for the assessment are included in Appendix A.
- 2.2.5 A summary of the assessment of the Project's harm to the following purposes is set out in Sections 2.3 to 2.7 with more detail based on Green Belt parcel groups in Appendix B:
  - a. To check the unrestricted sprawl of large built-up areas
  - b. To prevent neighbouring towns merging into one another
  - c. To assist in safeguarding the countryside from encroachment
- 2.2.6 Assessment of the harm as a result of the Project to Green Belt purpose *d. To* preserve the setting and special character of historic towns is set out in Section 2.6 with supporting information presented in Appendix C. This has not been

- undertaken based on Green Belt parcel groups as there are only two historic towns to consider.
- 2.2.7 Assessment of the harm as a result of the Project to Green Belt purpose *e. To* assist in urban regeneration by encouraging the recycling of derelict and other urban land is set out in Section 2.7. This has not been undertaken on the basis of Green Belt parcel groups as the purpose is considered overarching rather than location-specific to the Project.

Plate 2.1 Green Belt parcel groups



# 2.3 To check the unrestricted sprawl of large built-up areas.

- 2.3.1 The Project involves the construction of a new highway and associated works between the A2 in Kent and the M25 south of junction 29 in Greater London, representing a major linear form of highway infrastructure extending over a distance of 43.2km predominantly through land designated as Green Belt, with the exception of the River Thames under which the route runs.
- 2.3.2 The proposed route alignment is located in open countryside throughout its length. The area remains largely undeveloped with the exception of an existing network of road and rail corridors, utility structures such as pylons and powerlines, scattered farmsteads, along with various urban fringe uses such as pony paddocks and catteries, and recreational facilities including golf courses and playing fields.
- 2.3.3 The Order Limits covers a wider area than the highway route alignment of the Project, which is confined to a comparatively narrow corridor. The area of land beyond the physical boundary of the highway works is necessary in order to accommodate a range of associated mitigation and enhancement works, as well as providing replacement amenity and open space land.
- 2.3.4 In addition, areas of land within the Order Limits are required for a range of temporary uses in support of the main construction works, such as Contractor's compounds. These areas would be returned to their former state on completion of the main works or integrated into mitigation/compensation areas.
- 2.3.5 The nature and scale of the Project is such that it is not considered to result in the 'unrestricted sprawl' of large built-up areas or negate the role of the Green Belt in checking urban sprawl along its length. The decision making for any local developments will be a matter for local planning authorities and their respective Local Plans. As a major form of linear development it would not involve the creation of any additional highway junctions other than those required for the operation of the strategic highway route or development (other than those authorised under the draft DCO [REP6-010].
- 2.3.6 An assessment of the Project based on Green Belt parcel groups is presented in Appendix B.
- 2.3.7 Overall, the Project would not involve the sprawl of urban areas or prejudice this purpose of including land within the Green Belt for this purpose. Therefore there is no harm to this purpose.

# 2.4 To prevent neighbouring towns from merging into one another.

- 2.4.1 Although the Project route runs close to a number of settlements along its length, the distances involved would not result in the physical or visual merging of any towns or villages as a result of the Project and would not, therefore, reduce the spatial or perceptual experience of the separation of these existing settlements.
- 2.4.2 The Project proposals would not involve the creation of any new or additional junctions serving existing or proposed development sites and would not,

- therefore, attract/facilitate additional development to locate beside the Project route or facilitate the merging of neighbouring settlements.
- 2.4.3 The design of the Project would assist in providing a strong defensible boundary, reinforcing the presence of the proposed route alignment as a physical barrier between neighbouring settlements. The extensive landscape proposals within the immediate vicinity of the route alignment would assist in minimising any impacts and act as an environmental and visual barrier that would reduce the harm to the existing landscape character.
- 2.4.4 The Project is set back from and would be physically separated from neighbouring settlements and would not therefore lead to the merging of existing urban areas or their extension into open countryside.
- 2.4.5 An assessment of the Project undertaken based on Green Belt parcel groups is presented in Appendix B.
- 2.4.6 The Project would result in a new infrastructure corridor in the Green Belt, however, this would not result in neighbouring towns merging and would therefore not prejudice this purpose of land being included within the Green Belt. Therefore, there is no harm to this purpose.

# 2.5 To assist in safeguarding the countryside from encroachment.

- 2.5.1 It is acknowledged that the Project as a whole would not assist in safeguarding the countryside as the Project introduces highway infrastructure that would encroach into the open countryside. However, the nature of the Project as a form of highway infrastructure would provide a strong defensible boundary thereby limiting the extent of encroachment into the countryside.
- 2.5.2 It is anticipated and recognised in national policy (paragraph 5.171 of NPSNN) that linear infrastructure will often have to pass through Green Belt land and that recognition should be taken into account when considering the significance of any harm to the Green Belt. Linear projects of this nature are deliberately routed away from urban areas and can be characteristic of Green Belt locations.
- 2.5.3 An assessment of the Project undertaken based on Green Belt parcel groups is presented in Appendix B.
- 2.5.4 Overall, the Project would result in encroachment of built development into the countryside and the perception of built development as a result of lighting and the introduction of road traffic noise and will therefore conflict with this purpose of including land in the Green Belt. As a result there will be harm to this Green Belt purpose, however, the Project has been designed to high environmental standards with landscape planting to blend the Project into the landscape as far as practicable. Importantly, the Project would not enable, nor encourage, future development of the urban area to encroach into the countryside beyond the established limits of development. Therefore, it is considered that the harm will dissipate over time as the Project becomes an established feature in its own right.
- 2.5.5 It is also of note that Project includes new public open spaces and a commitment to their maintenance, such as Tilbury Fields and this characteristic

is beneficial in terms of retaining the openness of the Green Belt and safeguarding the countryside from encroachment. Proposed woodland planting/restoration helps mitigate the visual impacts of the Project, provides an ecological and community resource and makes a contribution to the Green Belt objective of safeguarding the countryside from encroachment.

# 2.6 To preserve the setting and special character of historic towns.

#### Identification of historic towns

- 2.6.1 For the purposes of this assessment there are considered to be two historic towns with the 'host' authorities of the Project that are within an approximate 2km study area:
  - a. Horndon-on-the-Hill
  - b. Brentwood
- 2.6.2 Both are included within English Heritage's Extensive Urban Survey and have therefore been considered as historic towns in the assessment. The Urban Survey comprised a series of separate documents. The relevant two for Horndon and Brentwood are covered in Historic Towns in Essex, Horndon-on-the-Hill, Historic Towns Assessment Report (English Heritage and Essex County Council, 1999) and Historic Towns in Essex, Brentwood, Historic Towns Assessment Report (English Heritage and Essex County Council, 1999).
- 2.6.3 The locations of the two historic towns in relation to the Project Order Limits are shown on Plate 2.2.

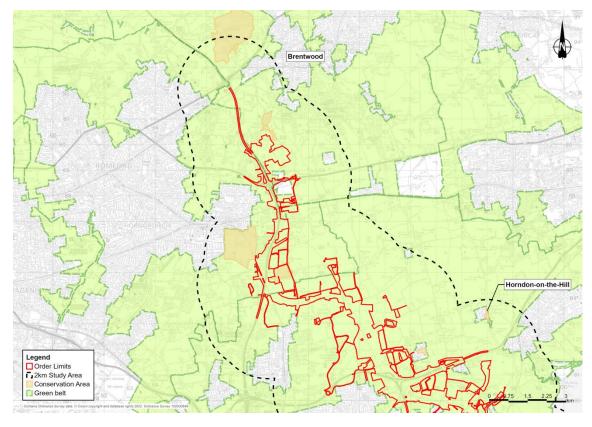


Plate 2.2 Historic Towns in Green Belt

- 2.6.4 While Gravesham contains the historic towns of Gravesend and Northfleet, according to Gravesham Borough Council's Green Belt Study (2020), the Green Belt 'was not considered to play any significant role in preserving the historic setting or special character, given the extent of modern development between the historic settlement cores of these towns and the Green Belt.' Gravesend and Northfleet have therefore been excluded from the assessment.
- 2.6.5 Thurrock Council does not identify any historic towns as part of its Green Belt Assessment, however, as set out above, Horndon-on-the-Hill has been identified within English Heritage's Extensive Urban Survey.
- 2.6.6 According to the Green Belt assessment by the London Borough of Havering, these areas do not contain historic towns. Havering has, therefore, been excluded from the assessment.
- 2.6.7 Brentwood Borough Council does not identify any other historic towns other than Brentwood.

## Methodology for assessment

- 2.6.8 There is currently no nationally accepted methodology for assessing the special character and setting of historic towns.
- 2.6.9 In the absence of a prescribed national methodology, both the Heritage Topic Paper Update (City of York Council, 2014) and Heritage Impact Appraisal (City of York Council, 2017) have been drawn upon to produce generic characteristics for the assessment of the special character and setting of

- historic towns. The principal characteristics are set out in Table C.1 in Appendix C.
- 2.6.10 For each historic town, an assessment is presented in Appendix C of how each of the seven principal characteristics contributes to and forms part of its special character and setting. An assessment is then presented of the impact of the Project on each of the principal characteristics.
- 2.6.11 Brentwood Borough Council's (2018) Green Belt Study has identified the relationship between the Green Belt parcels and historic towns which has been used to inform this assessment process.
- 2.6.12 A summary of the assessment for each historic town is presented below.

#### Assessment of Horndon-on-the-Hill

- 2.6.13 Horndon-on-the-Hill derives its special character from a combination of its urban fabric, urban form, archaeological resource, relationship of urban form to surrounding settlements, views and nature of the surrounding countryside. Part of its character also derives from its setting, primarily from views and the nature of the surrounding countryside and to a lesser degree from its relationship with surrounding settlements.
- 2.6.14 The Green Belt forms part of the setting of the town, contributing to its special character through the nature of the surrounding countryside, views and the relationship with surrounding settlements.
- 2.6.15 The Project Order Limits are located within the Green Belt approximately 875m south and 2.6km to the south-west of Horndon, with the built elements of the Project being substantially further way. The Project would be constructed to the west of Orsett and would not alter the relationship between the settlements, important views to and from Horndon, or the nature of the countryside surrounding the settlement. It is therefore considered that the Project would not have any impact on the special characteristics and setting of Horndon.

#### Assessment of Brentwood

- 2.6.16 Brentwood derives its special character from a combination of its urban fabric, urban form, archaeological resource, and from its setting including the relationship of urban form to the countryside, relationship with surrounding settlements, views and the nature of the surrounding countryside.
- 2.6.17 The Green Belt forms part of the setting of the town which contributes to its special character through the relationship of the urban form with the countryside, the relationship with surrounding settlements, and the nature of the surrounding countryside.
- 2.6.18 The northernmost part of the Order Limits is located some 700m to the southwest of Brentwood (excluding commercial premises within the Green Belt immediately west of Brentwood) and comprises the existing M25. The proposed widening of the existing M25 would be over 3km south of Brentwood and the closest new section of road would be over 5km south of Brentwood. It is therefore considered that the Project would not have any impact on the special characteristics and setting of Brentwood.

### **Summary**

- 2.6.19 Based upon the assessment set out above, it is considered that the Project will not harm this Green Belt purpose.
- 2.7 To assist in urban regeneration by encouraging the recycling of derelict and other urban land.
- 2.7.1 The Project, along with the wider enhancement and mitigation works, would occupy neither derelict nor urban land and is located in largely open countryside, outside defined settlement limits.
- 2.7.2 As Green Belts, by their very nature restrict the availability of land for development outside urban areas, support to urban regeneration through the recycling and reuse of brownfield land can more easily be achieved. This purpose supports the 'brownfield land first' approach, which aims to make the best use of previously developed land in urban areas as the focus for regeneration, before developing land beyond.
- 2.7.3 The Project does not prejudice this purpose of including land in the Green Belt as it will not result in the release of land from the Green Belt. Therefore, the Project does not harm this purpose of including land in the Green Belt as the Green Belt will continue to serve this purpose.

# 3 Assessment of harm to Green Belt openness

### 3.1 Introduction

3.1.1 The assessment at section E.6 of Appendix E of the Planning Statement [APP-500] recognises that the Project would introduce a new and significant feature into the Green Belt and that its impact on the openness of the Green Belt will be significant during construction, decreasing as the proposed mitigation features and landscaping mature. This section provides further detail to support this conclusion.

## 3.2 Green Belt openness

- 3.2.1 Openness as a characteristic of Green Belts is not formally defined.
- 3.2.2 Planning Practice Guidance paragraph: 001 Reference ID: 64-001-20190722 states that:

"Assessing the impact of a proposal on the openness of the Green Belt, where it is relevant to do so, requires a judgment based on the circumstances of the case. By way of example, the courts have identified a number of matters which may need to be taken into account in making this assessment. These include, but are not limited to:

- openness is capable of having both spatial and visual aspects in other words, the visual impact of the proposal may be relevant, as could its volume;
- the duration of the development, and its remediability taking into account any provisions to return land to its original state or to an equivalent (or improved) state of openness; and
- the degree of activity likely to be generated, such as traffic generation."

## 3.3 Assessment methodology

- 3.3.1 In order to fully understand the extent of harm to the openness of the Green Belt as a result of the Project, an assessment has been undertaken using groups of Green Belt parcels as set out in Section 2.2.
- 3.3.2 The existing spatial and visual openness of each group of Green Belt parcels has been qualitatively described in Appendix D, with reference to the existing land uses and built development, and how this influences the perception of spatial and visual openness.
- 3.3.3 The change in spatial and visual openness for each group of Green Belt parcels as a result of the Project has then been assessed in Appendix D using the following typical descriptors, which are based on Design Manual for Roads and Bridges LA 107 Landscape and Visual Effects (Highways England, 2020) reflecting aspects of spatial and visual openness:
  - No change: No discernible change in built development and resulting perception of spatial and visual openness.

- b. Negligible: Barely noticeable change in built development and resulting perception of spatial and visual openness, in terms of encroachment into the undeveloped landscape, visual links to the wider Green Belt and/or visual separation between settlements.
- c. Minor: Perceptible change in built development and resulting perception of spatial and visual openness, while not altering the overall balance of the undeveloped landscape, visual links to the wider Green Belt and/or visual separation or the perception of separation between settlements.
- d. Moderate: Noticeable change in built development and resulting perception of spatial and visual openness, with readily apparent encroachment into the undeveloped landscape and/or curtailment of visual links to the wider Green Belt and/or reduction in visual separation or the perception of separation between settlements.
- e. Major: Dominant change in built development and resulting perception of spatial and visual openness, with prominent encroachment into the undeveloped landscape and/or curtailment of visual links to the wider Green Belt and/or reduction in visual separation or the perception of separation between settlements.
- 3.3.4 All adverse changes in spatial and visual openness are considered in Appendix D, with any change assessed as moderate and above considered to represent significant harm to the existing physical / perceived spatial and visual openness of the Green Belt.
- 3.3.5 Changes in spatial and visual openness arising from the Project have been considered during construction, at year 1 (opening year) and 15 years after opening (design year). This is to determine how harm to Green Belt openness would change over time, including as a result of the establishment of mitigation planting at design year.

#### 3.4 Assessment

- 3.4.1 The assessment is presented in Appendix D for each Green Belt parcel group, describing changes in spatial and visual openness as a result of the Project.
- 3.4.2 A summary of the assessment is presented in Table 3.1.

Table 3.1 Summary of assessment of openness

Parcel group	Change in spatial and visual openness
Group A:	Construction: Minor harm
G12, G14 – G17	Year 1: Minor harm
	Year 15: Minor to negligible harm
Group B:	Construction: Major to negligible harm
G6 – G11a	Year 1: Major to negligible harm

Parcel group	Change in spatial and visual openness
	Year 15: Major to negligible harm
Group C:	Construction: Moderate to negligible harm
G1 – G3	Year 1 and year 15: Negligible harm
Group D:	Construction: Major to negligible harm
T11, T25 – T35	Year 1: Major harm to no change
	Year 15: Major harm to no change
Group E:	Construction: Major to negligible harm
T12 – T18, T20, T40, T41	Year 1: Major harm to no change
H7 – H11	Year 15: Major harm to no change
Group F:	Construction: Moderate to minor harm
T24	Year 1: Moderate to negligible harm
H5, H6	Year 15: Moderate harm to no change
Group G:	Construction: Minor harm
H12, H14	Year 1: Negligible harm
	Year 15: No change
Group H:	Construction: Minor harm
B22 – B26	Year 1: Negligible harm
	Year 15: No change

## 3.5 Summary

3.5.1 Harm to the openness of the Green Belt would vary depending upon the specific location in the Green Belt and also over time. This varies from no change in some areas to major harm in others and in most cases the effects of construction will be absorbed into the landscape in time - as the impacts from construction are ameliorated with the inclusion and establishment of mitigation planting helping to soften the appearance of road infrastructure. However overall, there would (as concluded in Appendix E of the Planning Statement) be significant harm to the openness of the Green Belt as a result of the Project.

## 4 Conclusion

4.1.1 This assessment has been provided in response to the Examining Authority's ExQ2 Q13.1.3 which requests the Applicant to provide "a more detailed assessment of the Project against the purposes for including land in the Green Belt and the impact on openness of the Green Belt" in order for the ExA to be able to establish the extent of harm caused.

### **Green Belt purposes**

- 4.1.2 The assessment concludes that the Project would result in no harm to four of the five Green Belt purposes but recognises that it would not (in promoting development in the Green Belt) contribute to the purpose of "safeguarding the countryside from encroachment". This is, however, recognised in policy which identifies that linear infrastructure linking areas near a Green Belt will often have to pass through Green Belt land. The Project would also deliver measures that would support this purpose by providing new public open spaces and woodland planting and committing to maintaining their openness.
- 4.1.3 This is consistent with the position presented within section E.6 of Appendix E of the Planning Statement [APP-500].

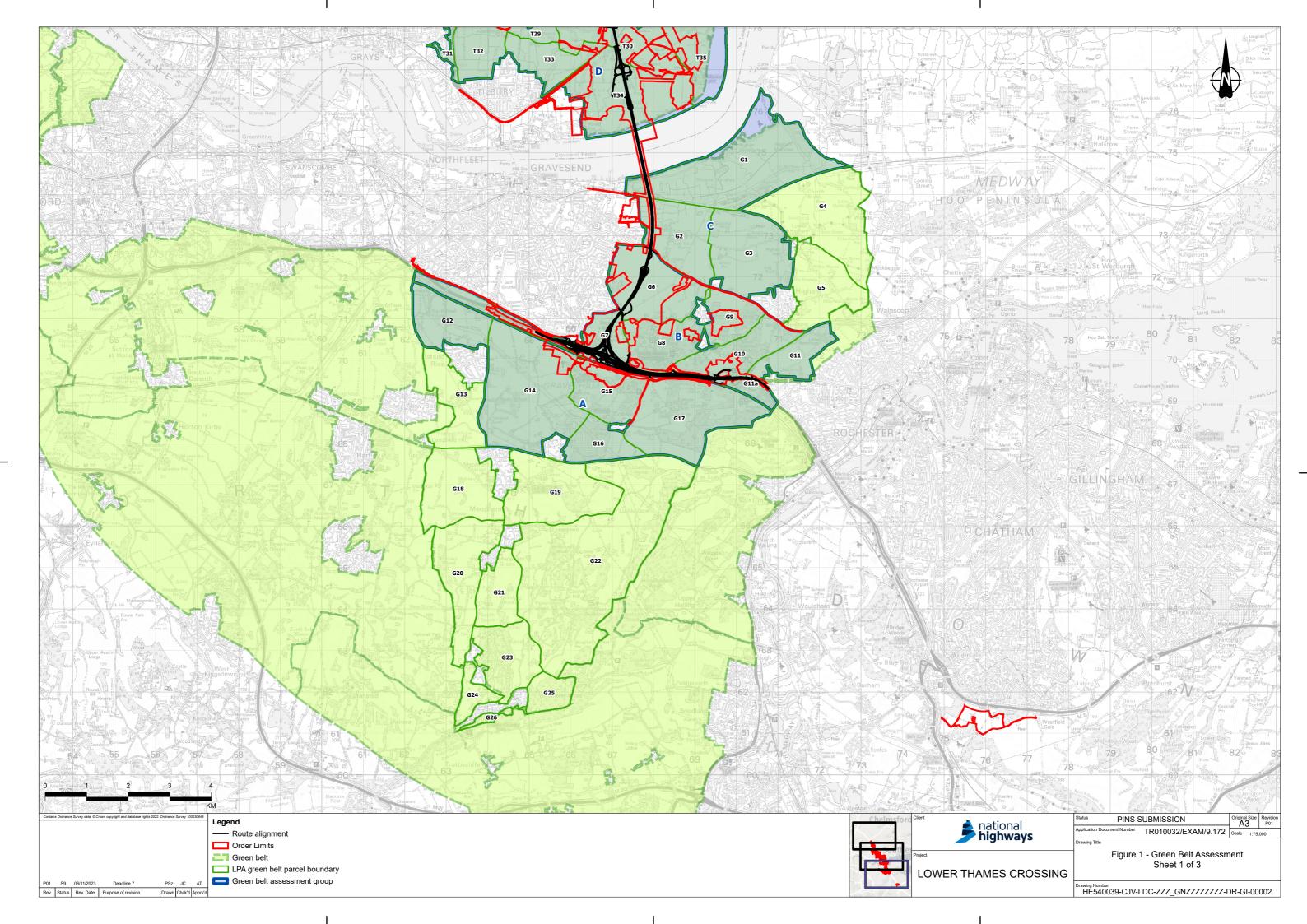
### **Openness**

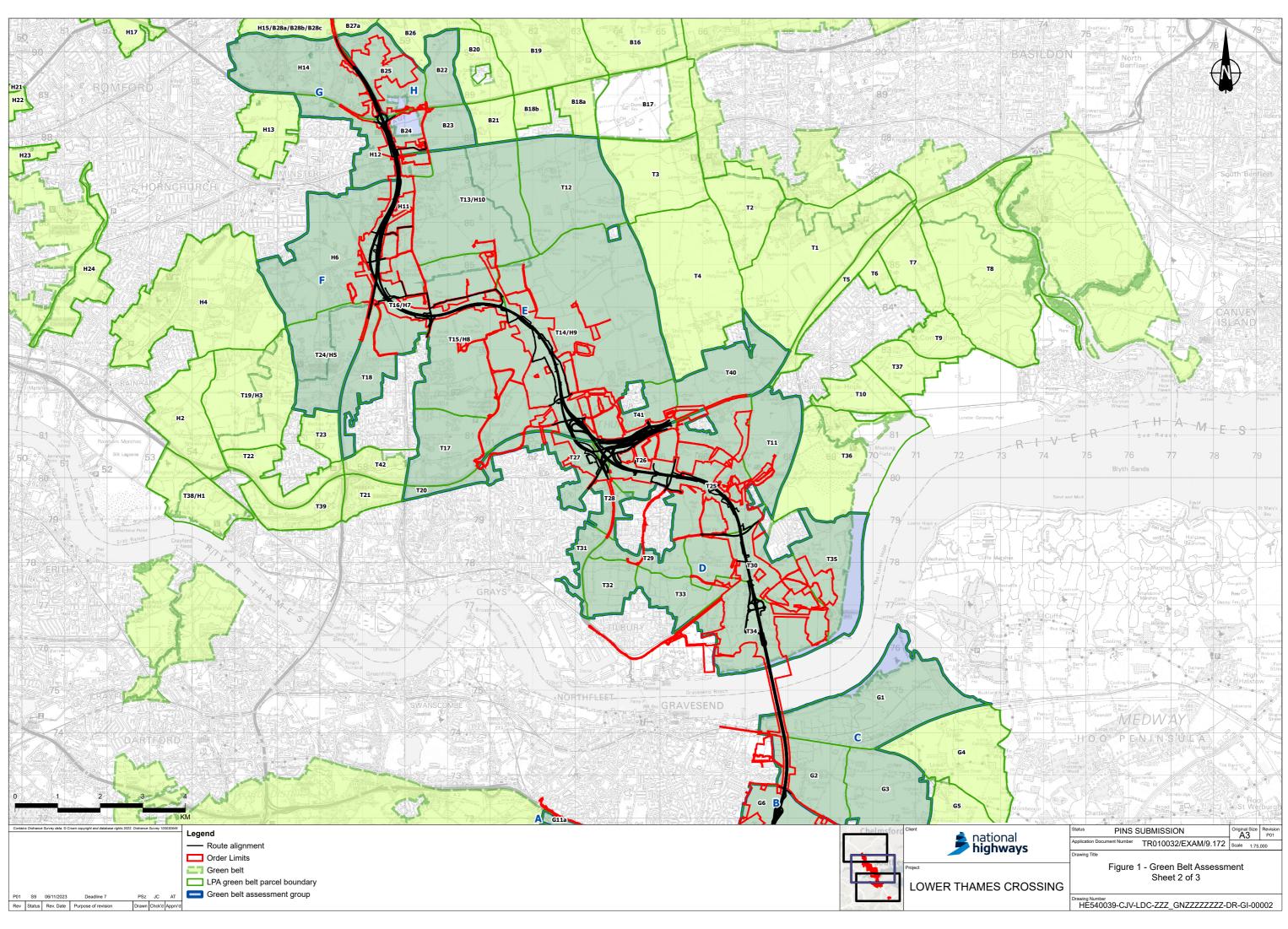
- 4.1.4 The assessment concludes that the Project would bring harm to the spatial and visual openness of the Green Belt, and the extent of that harm would vary depending upon the specific location in the Green Belt. This varies from no change in some areas to major harm in others and in most cases the effects of construction would be absorbed into the landscape in time as the impacts from construction are ameliorated with the inclusion and establishment of mitigation planting helping to soften the appearance of road infrastructure. However overall, there will be significant harm to the openness of the Green Belt as a result of the Project.
- 4.1.5 This is consistent with the position presented within section E.6 of Appendix E of the Planning Statement [APP-500].

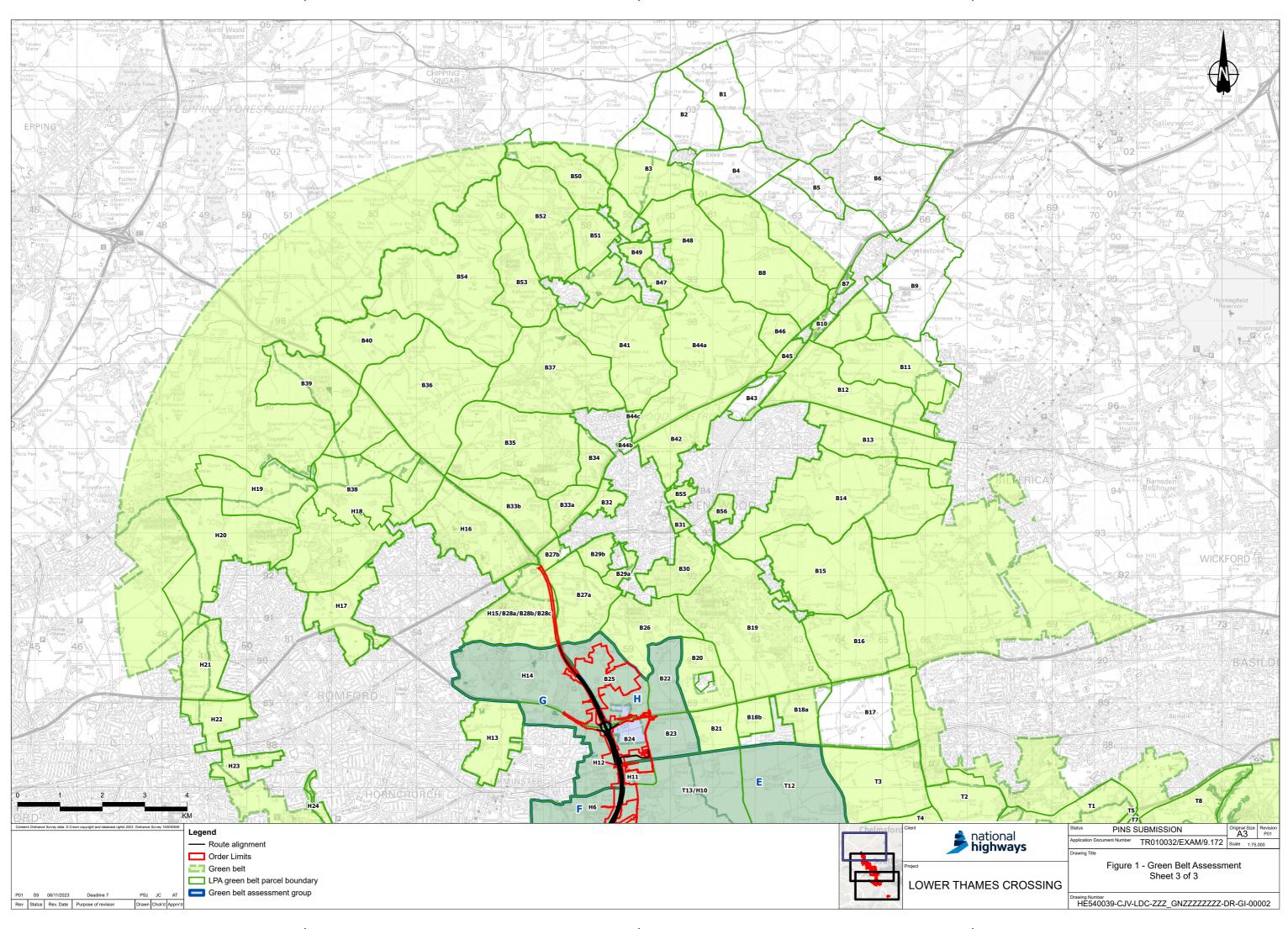
#### Conclusion

- As a 'worst case' assessment, the Applicant has adopted the position that the whole Project should be considered as 'inappropriate' development in the Green Belt (this is explained in further detail in response to ExQ2 Q13.1.2 in Deadline 6 Submission 9.152 Responses to the Examining Authority's ExQ2 Appendix I 13 Social, Economic & Land-Use Considerations [REP6-116]). As such, the Applicant has demonstrated very special circumstances based on the project as a whole. There is no alternative means of meeting the need for the Project, other than as a route through the Green Belt.
- 4.1.7 The assessment of very special circumstances is presented at section E.8 of Appendix E of the Planning Statement [APP-500] which should be read alongside the additional details presented in this report, which confirms the Applicant's previous conclusions, while providing the Examining Authority with additional detail and evidence to support that conclusion that very special circumstances exist for the Project.

# **Appendix A Green Belt parcel groups**







# Appendix B Assessment of Harm to the Green Belt Purposes

**Table B.1 Assessment of Harm to Green Belt Purposes** 

Parcel Group	Check the unrestricted sprawl of large built- up areas	Prevent neighbouring towns merging	Safeguarding the countryside from encroachment
A	The key purpose of the Green Belt in this location is to prevent the towns of Rochester and Gravesend from expanding in an unrestricted manner and to separate areas such as Istead Rise from Gravesham.  The Project would not prejudice this purpose as there would be no removal of land from the Green Belt.  The A2 and HS2 infrastructure corridor already forms a strong boundary to contain any southerly expansion of Gravesend. The Project would not change this.	The key purpose of the Green Belt in this location is to prevent the towns of Rochester and Gravesend from merging.  The Project would result in a new infrastructure corridor in the parcel group, however, this would not result in neighbouring towns merging and would therefore not prejudice this purpose of land being included within this Green Belt parcel group.	There is limited built development proposed within this Green Belt parcel group as part of the Project. However, the development that is proposed is limited to that which is necessary as a result of the widening of the existing A2 infrastructure corridor immediately to the north of the parcel group.  Where built development is proposed, it principally comprises the reconfiguration of existing road infrastructure in the parcel group. Encroachment into the countryside has been limited as far as practicable.  Although built development is only limited in the parcel group, there would be encroachment of built development into the countryside which would conflict with this Green Belt purpose. However, the Project has been designed to high environmental standards with landscape planting to blend the Project into the landscape as far as practicable. The Project would not enable, nor encourage, future development to encroach into the countryside.
В	The key purpose of the Green Belt in this location is to prevent the towns of Rochester and Gravesend expanding in an unrestricted manner and to separate areas such as Thong, Shorne and Higham.	The key purpose of the Green Belt in this location is to prevent the towns of Rochester and Gravesend from merging.  The Project would result in a new infrastructure corridor in the parcel group, however, this	The Project would result in encroachment of built development into the countryside in this parcel group, with the widening of the A2 corridor, the new split-level junction of the A2/A122, the A122 in a cutting and the South Portal.

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Parcel Group	Check the unrestricted sprawl of large built- up areas	Prevent neighbouring towns merging	Safeguarding the countryside from encroachment
	The Project would not prejudice this purpose as there would be no removal of land from the Green Belt.  The A2 and HS2 infrastructure corridor already forms a strong boundary to contain any southerly expansion of Gravesend. The Project will not change this within this Green Belt parcel group.  The Project, including the landscaping, ecological mitigation and he creation of Chalk Park would create a firm eastern Green Belt boundary to contain any further expansion of Gravesend, therefore preventing unrestricted sprawl of the built-up area of Gravesham.	would not result in neighbouring towns merging and would therefore not prejudice this purpose of land being included within this Green Belt parcel group.	The new road infrastructure will also introduce road traffic noise, potentially increasing the perception of development in the Green Belt.  The Project will, therefore, conflict with this purpose of including land in this Green Belt parcel group. However, the Project has been designed to high environmental standards with landscape planting to blend the Project into the landscape as far as practicable such as in the use of green bridges at Brewers Road, Thong Lane south and Thong Lane north to soften the impact of the bridges in the landscape as well as achieving recreational, environmental and ecological benefits.  The Project, including the landscaping, ecological mitigation and the creation of Chalk Park would create a firm eastern Green Belt boundary to contain any further expansion of Gravesend, thereby limiting the potential for future encroachment in the countryside.
С	The key purpose of the Green Belt in this location is to prevent the towns of Rochester and Gravesend expanding in an unrestricted manner.  The Project would not prejudice this purpose as there will be removal of land from the Green Belt and the A122 would be in a tunnel under this Green Belt parcel group. It would neither enable nor encourage the unrestricted sprawl of the built-up area or Rochester.	The key purpose of the Green Belt in this location is to prevent the towns of Rochester and Gravesend from merging.  The Project would result in a new infrastructure corridor in the parcel group. However, this would not result in neighbouring towns merging and would therefore not prejudice this purpose of land being included within this Green Belt parcel group.	The A122 will be in a tunnel under this Green Belt parcel group and therefore there will be no encroachment of built development into the countryside as a result of the Project.  The Project would therefore not prejudice this Green Belt purpose in this parcel group as there will be no encroachment by the Project and it will neither enable nor encourage future encroachment by development.

Parcel Group	Check the unrestricted sprawl of large built- up areas	Prevent neighbouring towns merging	Safeguarding the countryside from encroachment
D	The key purpose of the Green Belt in this location is to prevent the built-up areas of Tilbury, Little Thurrock, Grays, Chadwell St Mary, East Tilbury and Linford expanding in an unrestricted manner and, in a limited number of cases, from merging.  The Project would not prejudice this purpose as there would be no removal of land from the Green Belt.  While a new infrastructure corridor would be created across this parcel group, it would not enable unrestricted sprawl of built-up areas as the Green Belt will remain.	The key purpose of the Green Belt in this location is to prevent the neighbouring towns of Tilbury, Little Thurrock, Grays, Chadwell St Mary, East Tilbury and Linford from merging into each other.  In this parcel group, the Green Belt also plays a role in preventing Southfields from merging with neighbouring towns.  The Project would result in a new infrastructure corridor in the parcel group, however, this would not result in neighbouring towns merging and would therefore not prejudice this purpose of land being included within this Green Belt parcel group.	The Project would result in encroachment of built development into the countryside in this parcel group including the northern tunnel portal, Tilbury viaduct, the A122 with cuttings, false cuttings and over bridges, and part of the A13 junction.  The new road infrastructure will also introduce road traffic noise potentially increasing the perception of development in the Green Belt.  The Project will therefore conflict with this Green Belt purpose in this parcel group. However, the Project has been designed to high environmental standards with landscape planting to blend the Project into the landscape as far as practicable and the use of green bridges at Muckingford Road and Hoford Road to soften the impact of the bridges in the landscape as well as achieving recreational, environmental and ecological benefits. However, the Project would not enable, nor encourage, future development to encroach into the countryside.
E	The key purpose of the Green Belt in this location is to prevent the large built-up areas of South Ockendon and Thurrock from expanding in an unrestricted manner.  The Project would not prejudice this purpose as there would be no removal of land from the Green Belt.  While a new infrastructure corridor would be created across this parcel group, it would not	The key purpose of the Green Belt in this location is to prevent the South Ockendon, Aveley, and Thurrock from merging.  In this parcel group, the Green Belt also plays a role in preventing Bulphan, Orsett, and Horndon-on-the-Hill from merging with neighbouring towns.  The Project would result in a new infrastructure corridor in the parcel group, however, this	The Project would result in encroachment of built development into the countryside in this parcel group including part of the A13 junction, Orsett Fenn viaduct, Mardyke viaduct, and the A122 with cuttings, false cuttings and over bridges.  The new road infrastructure will also introduce road traffic noise potentially increasing the perception of development in the Green Belt.

Parcel Group	Check the unrestricted sprawl of large built- up areas	Prevent neighbouring towns merging	Safeguarding the countryside from encroachment
	enable unrestricted sprawl of built-up areas as the Green Belt will remain.	would not result in neighbouring towns merging and would therefore not prejudice this purpose of land being included within this Green Belt parcel group.	The Project will therefore conflict with this Green Belt purpose in this Green Belt parcel group. However, the Project has been designed to high environmental standards with landscape planting to blend the Project into the landscape as far as practicable and the use of green bridges at Green Lane and North Road. The Project would not enable, nor encourage, future development to encroach into the countryside.
F	The key purpose of the Green Belt in this location is to prevent the built-up areas of Cranham, Upminster and Aveley from expanding in an unrestricted manner.  The Project would not prejudice this purpose as there would be no removal of land from the Green Belt. While the M25 infrastructure corridor will be widened this would not enable unrestricted sprawl of the built-up areas as the Green Belt will remain.	The key purpose of the Green Belt in this location is to prevent the Cranham, Upminster, Aveley and South Ockendon merging.  The Project would result in a new infrastructure corridor in the parcel group, however, this would not result in neighbouring towns merging and would therefore not prejudice this purpose of land being included within this Green Belt parcel group.	The Project would result in encroachment of built development into the countryside in this parcel group with the widening of the M25 infrastructure corridor providing links to the A122.  The Project will therefore conflict with this purpose of including land in this Green Belt parcel group. However, the Project has been designed to high environmental standards with landscape planting to blend the Project into the landscape as far as practicable. It would not enable, nor encourage, future development to encroach into the countryside.
G	The key purpose of the Green Belt in this location is to prevent the built-up areas of Romford, Hornchurch, Cranham and Upminster from expanding in an unrestricted manner.  The Project would not prejudice this purpose as there will be removal of land from the Green Belt. While the existing M25 infrastructure corridor would be widened this would not enable unrestricted sprawl of the built-up areas as the Green Belt will remain.	The key purpose of the Green Belt in this location is to prevent the towns of Romford, Hornchurch, Cranham merging together and from those towns merging with Brentwood.  While the Project would result in the existing M25 infrastructure corridor being widened this would not result in neighbouring towns merging and would therefore not prejudice this Green Belt purpose within this parcel group.	The Project would result in encroachment of built development into the countryside in this parcel group with the widening of the M25 infrastructure corridor. However, this is limited to the existing road infrastructure corridors.  Although built development is limited in the parcel group, this encroachment would conflict with this Green Belt purpose in this parcel group. However, the Project has been designed to high environmental standards with landscape

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Parcel Group	Check the unrestricted sprawl of large built- up areas	Prevent neighbouring towns merging	Safeguarding the countryside from encroachment
			planting to blend the Project into the landscape as far as practicable. It would not enable, nor encourage, future development to encroach into the countryside.
Н	The key purpose of the Green Belt in this location, although to a lesser extent than parcel group G, is to prevent the built-up areas of Romford, Hornchurch, Cranham and Upminster from expanding in an unrestricted manner.	The key purpose of the Green Belt in this location, although to a lesser extent than parcel group G, is to prevent the towns of Romford, Hornchurch, Cranham and Upminster from merging with Brentwood.	The Project would result in encroachment of built development into the countryside in this parcel group with the widening of the M25 infrastructure corridor. However, this is limited to the existing road infrastructure corridors.
	The Project would not prejudice this purpose as there will be removal of land from the Green Belt. While the existing M25 infrastructure corridor would be widened this would not enable unrestricted sprawl of the adjacent areas as the Green Belt will remain.	The Green Belt in this location also plays a role in preventing Childerditch and West Horndon from merging.  While the Project would result in the existing M25 infrastructure corridor being widened this would not result in neighbouring towns merging and would therefore not prejudice this Green Belt purpose within this parcel group.	Although built development is limited in the parcel group, there would be encroachment of built development into the Green Belt purpose in this parcel group. However, the Project has been designed to high environmental standards with landscape planting to blend the Project into the landscape as far as practicable. It would not enable, nor encourage, future development to encroach into the countryside.

# **Appendix C Historic Towns Assessment**

## **C.1** Historic Towns Assessment Methodology

- C.1.1 No national policy or guidance currently exists to assess the special character and setting of historic towns within the Green Belt or the potential impact of the Project on these settlements within the Green Belt, although a number of local authorities have undertaken their own studies into the contribution, among other things, the Green Belt makes to the special character of historic towns and cities.
- C.1.2 In particular, City of York Council has published detailed draft guidance on these topics, prepared in collaboration with Historic England, as part of the emerging City of York Council Local Plan. The methodology for the Project has been developed drawing upon these publications in order to establish an adaptable method of assessment for general use. It also draws upon elements of the following settlement-specific or regional guidance documents, which contain relevant information:
  - a. Brentwood Borough Council Green Belt Study Part II: Green Belt Parcel Definition and Review (2018)
  - b. Brentwood Borough Council Green Belt Study Part III: Assessment of Potential Housing, Employment and Mixed Use Sites in the Green Belt and their Relative Contribution to the Purposes of the Green Belt Designation (2019)
  - c. City of York Local Plan Topic Paper (TP1) Approach to Defining York's Green Belt, City of York Council (2018) and associated Addendum (2021)
  - d. Heritage Impact Appraisal, City of York Council (2017)
  - e. Heritage Topic Paper Update, City of York Council (2014)
  - f. Gravesham Green Belt Study, Gravesham Borough Council (2018)
  - g. Gravesham Stage 2 Green Belt Study, Gravesham Borough Council (2020)

- h. The Sustainable Growth of Cathedral Cities and Historic Towns, Green Balance and David Burton-Pye for English Heritage (2014)
- i. Green Belt Study, London Borough of Havering (2016)
- j. Sites Green Belt Assessment and Sustainability Assessment: Final Report, London Borough of Havering (2018)
- k. Thurrock Strategic Green Belt Assessment Stages 1a and 1b, Thurrock Council (2019)
- C.1.3 Data from the Green Belt assessments listed in paragraph C.1.2 above was utilised to identify historic towns whose special character and setting could potentially be harmed by the Project where it passes through the designated Green Belt. A number of other documents identified in this paragraph (including emerging Local Plan documents produced by the City of York Council in consultation with Historic England) were utilised to create a methodology to articulate the special character and setting of the identified towns, in order to assess how the Project could potentially impact upon them.
- C.1.4 According to the Green Belt assessments of Thurrock Council and the London Borough of Havering, these areas do not contain historic towns. Havering has therefore been excluded from the assessment. However, Thurrock contains the settlement of Horndon-on-the-Hill, which, while generally regarded as a village, was included within English Heritage's Extensive Urban Survey and has therefore been included in the assessment at the request of Essex County Council. (The Urban Survey comprised a series of separate documents, the relevant two for Horndon and Brentwood are covered in Historic Towns in Essex, Horndon-on-the-Hill, Historic Towns Assessment Report (English Heritage and Essex County Council, 1999a) and Historic Towns in Essex, Brentwood, Historic Towns Assessment Report (English Heritage and Essex County Council, 1999b)).
- C.1.5 While Gravesham contains the historic towns of Gravesend and Northfleet, according to Gravesham Borough Council's (2020) Green Belt Study, the Green Belt 'was not considered to play any significant role in preserving the historic setting or special character of the towns, given the extent of modern development between the historic settlement cores of these towns and the Green Belt.' Gravesend and Northfleet have therefore been excluded from the assessment.

- C.1.6 Following the identification of the historic towns, the special character and setting of each historic town has been assessed and defined in a tabular format using seven principal characteristics as set out in Table C.1 below. An historic town (for which there is no standard accepted definition) does not however comprise a single heritage asset (as defined in the NPPF).
- C.1.7 There is currently no nationally accepted methodology for assessing the special character and setting of historic towns. Therefore, a bespoke methodology has been developed, drawing upon a number of existing assessments produced for historic towns in England.
- C.1.8 Given that the NPPF refers to *'the setting and special character of historic towns'*, villages have therefore been excluded from this assessment (with the exception of Horndon-on-the-Hill).

**Table C.1 Special character and setting elements** 

Principal characteristics	Character and setting elements
Nature of urban fabric	Historic character, strong diversity of architectural types or distinctive concentrations of similar architectural types, city walls, quantity or diversity of historic buildings and monuments
Urban form	Compact, linear, multi-focal, distinct districts, key routeways, street pattern, squares, parks, distinctive building plots or massing, key internal views, watercourses influencing urban form, legibility of the spatial and/or chronological development of the urban form
Archaeological resource	Time depth, high archaeological potential due to local conditions, known concentrations of archaeological remains of particular or varied periods
Relationship of urban form to countryside	Softened urban edge or clearly defined boundary between urban and rural, interaction of topography and open space with the urban edge
Relationship of urban form to surrounding settlements	Clearly defined satellite towns or villages, relationships with other settlements, areas of green space preventing coalescence with neighbouring settlements
Views	Important views into and out of the settlement, views of landmark buildings or open spaces allowing views, or built form creating vistas, defined approaches to the town promoting views
Nature of surrounding countryside	Open and flat promoting views or distinctive topography contributing to character, designed landscapes, watercourses, common land, continuing historic land use e.g. orchards, pasture or woodland, pattern and scale of surrounding countryside elements

## C.2 Assessment of Horndon-on-the-Hill

Plate C.1 Horndon-on-the-Hill

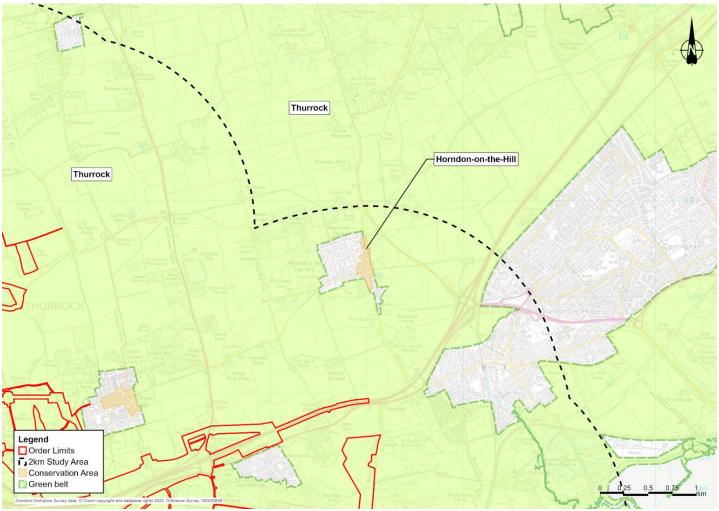


Table C.2 Horndon-on-the-Hill special character and setting elements

Historic town name: Horndon-on-the-Hill		
Principal characteristics	Assessment of characteristics and setting	
Nature of urban fabric	According to Historic England's Extensive Urban Survey of Horndon-on-the-Hill, 'the medieval and post-medieval town consists of the High Road with the village strung out along it, the church which is set back to the west and a possible infilled marketplace sited between the church and High Road.' This area corresponds with the Horndon-on-the-Hill Conservation Area.	
	The town encompasses this Medieval and Post-Medieval core, along with 20th century residential development to the west and south.	
	It contains one Grade I listed building (the Church of St. Peter and St. Paul), two Grade II* listed buildings and 15 Grade II listed buildings.	
	Listed buildings are all located within the historic core and Conservation Area.	
	The church incorporates some reused Roman bricks in its fabric, although the building dates from the 13th century. It is also the only ragstone or flint rubble structure in the village; the other historic buildings are timber-framed or brick.	
	Aside from the church, the dates of the listed buildings are: one 13th century; two each from the 14th, 15th and 16th centuries; one 17th century; one 17th or 18th century; two 18th century; five 19th century and two 20th century.	
	Overall, the urban fabric predominately dates from the mid and late 20th century. A small number of residential properties had been constructed along newly established streets by the 1930s. However, the majority of buildings in the settlement are semi-detached residential properties constructed in the latter half of the 20th century.	
Urban form	Essentially a linear Medieval village along High Road with a larger 20th century suburban development on the western side, and a small amount of linear 20th century development extending along High Road to the north and south.	
	The historic routes of High Road and Orsett Road are still extant, with listed buildings closely fronting onto the narrow junction. Medieval tenement plots are still extant on the eastern side of High Road.	
	The lines of two Medieval alleyways survive either side of the Woolmarket.	
	When travelling through Horndon along High Road, it is highly intelligible as a historic linear settlement.	
	In plan form, the historic core is clearly legible as a separate area from the 20th century development to the west.	
	Within the urban area are three primary green spaces: the churchyard, within the Conservation Area; the later graveyard to the west; and the primary school playing grounds to the north.	

Historic town name: Horndon-on-the-Hill		
Principal characteristics	Assessment of characteristics and setting	
Archaeological resource	A possible defended enclosure (the putative site of the Saxon settlement), along with substantial lynchets, are located outside the settlement to the east of High Road, within the Green Belt.	
	There is potential for remains of Early Medieval, Medieval and Post-Medieval date within the settlement. This includes the potential below-ground remains of a Saxon church pre-dating the existing church.	
	Waterlogged deposits are unlikely to be present, apart from within specific features such as wells.	
	The soil type is conducive to the preservation of man-made artefacts and faunal remains.	
Relationship of	To the east, north and west there is an abrupt boundary between the urban area and the countryside.	
urban form to countryside	To the south-west and south, along Orsett Road and High Road (becoming South Hill), the boundary between urban and rural is blurred by linear development and period detached houses or rows of bungalows.	
	Within the Green Belt immediately adjacent to the settlement are two important areas of associated open space: the sports grounds surrounding the cricket club and scout hall to the south-west, and the allotments to the east of High Road.	
Relationship of urban form to	Located on a hill, it retains a distinct identity separate from other settlements in the area. The immediate surrounds of Horndon are formed by a system of rectilinear fields and numerous farmsteads.	
surrounding settlements	Separated from the larger urban areas of Stanford-le-Hope and Corringham c. 775m to the south-east, on lower-lying ground, by a number of agricultural fields and the A1013 dual carriageway. The dual carriageway creates a distinct boundary between the rural surrounds of Horndon and these urban areas.	
	The settlement of Southfields c. 1.6km to the south is also separated by large rectilinear fields, farmsteads and the A1013 dual carriageway and junction with the A128.	
	Orsett, c. 2km to the south-west, is linked with Horndon via a series of rural laneways, albeit interrupted by a dualled section of the A128.	
	The settlements to the north are more dispersed and rural, and largely take the form of linear hamlets, with the more sizeable village of Bulphan located some 3.1km to the north-west of Horndon-on-the-hill.	
Views	Has a number of key internal views to its Medieval church, and key views along the main streets in the Conservation Area.	
	Long-distance views of the agricultural landscape to the north-east are also possible from High Road within the Conservation Area, overlooking the allotments.	
	Outside the Conservation Area, Horndon's hilltop nature lends itself to frequent long-distance views to the north and south, glimpsed between semi-detached houses on the 20th century streets, particularly Hillcrest Road.	

Historic town name: Horndon-on-the-Hill		
Principal characteristics	Assessment of characteristics and setting	
	The various approaches to the town create views into and out of the settlement along leafy rural lanes, particularly looking north and south along High Road out of the settlement, overlooking the lower-lying landscape.	
	Various PRoWs enable views into and out of the settlement to the north, east and south, most prominently along York Road to the north.	
Nature of surrounding	The topography of the area makes a key contribution to the character and setting of Horndon, with the hill on which it is located having giving rise to its name.	
countryside	The surrounding countryside is an LLCA identified in the Thurrock Landscape Capacity Study (Thurrock Council, 2005) as B1 Sticking Hill Rolling Farmland/Wooded Hills.	
	The Langdon Hills are a particularly prominent landform in views north from Horndon, located within LLCA B1.	
	The area visible in southward views from High Road is LLCA B1 and LLCA D5 Linford/Buckingham Hill Urban Fringe.	
	The nearby village of Orsett is also located within LLCA B1.	
	The location of Horndon on a hill, with descending landscapes to the north, east and south, contributes greatly to its character.	
	The agricultural landscape immediately surrounding Horndon is a historic landscape character unit of medium value.	

**Table C.3 Horndon-on-the-Hill Impact Assessment** 

Historic Town Name: Horndon-on-the-Hill			
Principal characteristics	Impact of the Project on the principal characteristic		
Nature of urban fabric	The Project will not have any impact on this characteristic.		
Urban form	The Project will not have any impact on this characteristic.		
Archaeological resource	The Project will not have any impact on this characteristic.		
Relationship of urban form to countryside	The Project will not have any impact on this characteristic.		
Relationship of urban form to surrounding settlements	The Project will not have any impact on this characteristic.		
Views	The Project will not have any impact on this characteristic.		
Nature of surrounding countryside	The Project will not have any impact on this characteristic.		

## C.3 Assessment of Brentwood

Plate C.2 Brentwood (including former outlying villages of Brook Street, Pilgrim's Hatch, Shenfield and Hutton)

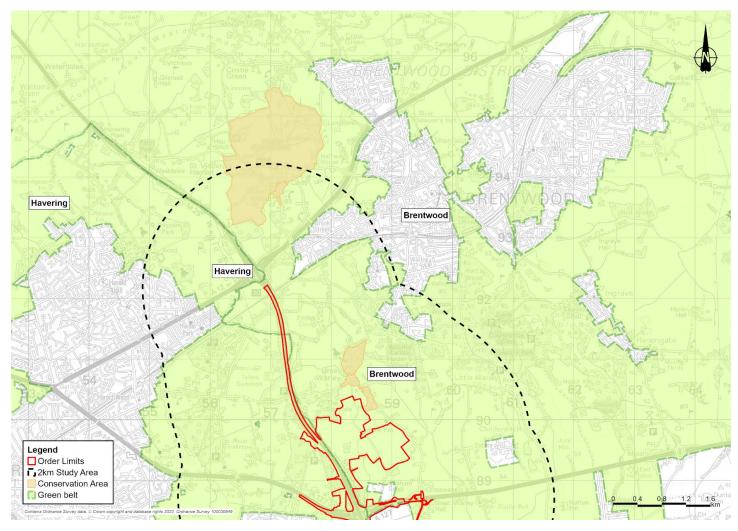


Table C.4 Brentwood special character and setting elements

Historic town name: Brentwood		
Principal characteristics	Assessment of characteristics and setting	
Nature of urban fabric	The urban area encompasses the historic town of Brentwood and the formerly outlying villages of Brook Street, Pilgrim's Hatch, Shenfield and Hutton.	
	Brentwood has grown in the 20th century to encompass formerly outlying institutions, namely the former County Lunatic Asylum and Warley Barracks.	
	It contains two Conservation Areas: Brentwood Town Centre and Highwood Hospital.	
	The urban area (located outside of the Green Belt) contains six Grade II* listed buildings and 69 Grade II listed buildings.	
	The majority of the listed buildings are focused in the historic cores and institutions above. A small number of listed buildings represent what were formerly rural dwellings and coaching inns along main routeways, now incorporated into the urban area. The majority of listed buildings date from the 18th and 19th centuries, with a smaller number of earlier Post-Medieval and Medieval buildings.	
	Overall, the urban fabric predominately dates from the mid and late 20th century, particularly in the suburban commuter neighbourhoods of Shenfield and Hutton.	
	Pilgrim's Hatch has a core of early 20th century housing established by 1920.	
Urban form	The High Street preserves the primary Medieval street pattern (also the route of the former Roman road). The Medieval route of Hart Street runs parallel to part of High Street.	
	A Medieval nucleus survives at High Street, where a block of short building plots and a back lane (Hart Street) is legible. The eastern end of this block formed the site of Medieval marketplace.	
	The Medieval nucleus includes the surviving parts of the chapel of St. Thomas Becket founded c. 1221 and a pilgrim hostel which is now much altered and known until recently as the White Hart Inn.	
	Areas of Post-Medieval expansion were primarily focused in the vicinity of the Medieval nucleus, until the construction of the railway at the then eastern end of the town led to further development near the station and south of the High Street where terraces of workers' houses were built.	
	A multi-focal town: the main focus of the Brook Street/Brentwood coalescence along the London Road/High Street; 19th and 20th century expansion at Warley to the south; two areas of 20th century expansion to the north including the more distinct area of Pilgrim's Hatch separated by the A12 dual carriageway; and the 20th century suburban areas of Shenfield and Hutton separated from one another by the railway.	

Historic town name: Brentwood				
Principal characteristics	Assessment of characteristics and setting			
	The town is split by a number of major routeways: the London Road/High Street (A1023); the A12 dual carriageway; and the railway. The A128 also bisects the town, forming a prominent crossroads in the Medieval historic core where it crosses the A1023.			
	The town contains a number of prominent green spaces, particularly King George's Park, Shenfield Common and Brentwood Sports Ground, which brings green space close to the historic core and largely separates the town in two (Warley/High Street/Brook Street/Pilgrim's Hatch to the west and Shenfield/Hutton to the east).			
	The town features large number of trees and woodland areas including Shenfield Common, the grounds of Brentwood Community Hospital and Thrift Wood. These trees form an important link with Brentwood's origins as a former woodland town.			
	Contains a number of important views such as those to St. Thomas' church and spire from multiple locations; views from the north, west and east to the landmark of Wilsons Corner former department store; and long views along High Street.			
Archaeological resource	While limited archaeological work has taken place there is high potential for below-ground Medieval and Post-Medieval remains to survive.			
	Waterlogged deposits are unlikely to be present, apart from within specific features such as wells.			
	The local soil is alkaline, and conducive to the survive of bone artefacts or skeletal remains.			
	There is less evidence and potential for archaeological remains pre-dating the Medieval period.			
Relationship of urban form to countryside	A dynamic interaction with the countryside. The wedge of Shenfield common close to the town centre directly connects southward to the countryside, through King George's Park and Hartswood Golf Club which are connected to The Forest and Thorndon Park (including the Grade II* registered Thorndon Hall and Thorndon Park Conservation Area). These areas all form part of the Green Belt and identified by the Brentwood LCA as F9 Little Warley Wooded Farmland.			
	The countryside also penetrates the centre from the north (Brentwood LCA F8 Doddinghurst Wooded Farmland), separated from the southern part of the Green Belt mentioned above by just 70m. Here, sports grounds straddle the High Street and lead northward to woodland and a network of small agricultural fields in close proximity to the town centre. These areas also all form part of the Green Belt.			
Relationship of	Surrounded by numerous linear historic hamlets with interspersed farmsteads and cottages.			
urban form to surrounding settlements	Essex LCA D2 (Brentwood Hills) separates Brentwood from the historic market town of Billericay c. 2.5km to the east. These market towns are linked by the railway and the winding historic route of the A129. Part of the historic village of Hutton extends east of Brentwood (forming a Conservation Area, this village has been only partially incorporated into Brentwood), and the village of Havering's Grove is situated along the A129 between the towns.			

Historic town na	me: Brentwood
Principal characteristics	Assessment of characteristics and setting
	Mountnessing is a village located c. 4km north-east of Brentwood, also situated close to the A1023, route of the former Roman road and railway.
	Approximately 2.5km of undulating farmland interspersed with hamlets to the north separates Brentwood from the clustered settlements of Kelvedon Hatch, Doddinghurst, Wyatt's Green and Hook End.
	Linear hamlets outlying Brentwood are particularly clustered in the Green Belt immediately north-west of Pilgrim's Hatch.
	Approximately 1.2km of agricultural land, bisected by the M25, separates Brentwood from Romford to the south-west, a suburb of London. This area of Green Belt (Brentwood Landscape Character Areas F13 and F15) is key to preserving the separate identity of Brentwood and preventing coalescence with the Greater London area. Despite this fact, the Green Belt in this area contains a number of commercial premises.
	The hamlet of Great Warley (including the Great Warley and Warley Place Conservation Areas) is located c. 330m south-west of Brentwood. These areas are dominated by trees and green space, and blend with the landscape of LCA D2 surrounding Brentwood.
	The linear settlements of Ingrave and Herongate (containing Herongate Conservation Area) are located c. 920m south-east of Brentwood, along the A128.
Views	The Brentwood Landscape Character Assessment notes southward views to the Brentwood urban edge from the southern part of LCA F8 Doddinghurst Wooded Farmland.
	Open northward views to the southern edge of Brentwood are also noted from northern part of LCA F9.
	LCA F10 Heybridge Wooded Farmland possesses views south-west to the urban edge of Brentwood.
	To the south-west of Brentwood, LCA F13 Great Warley Wooded Farmland possesses views to the southern fringe of the Brentwood urban area.
	Open views to Brentwood's urban edge are possible from the northern part of LCA F14 Ingrave and Herongate Wooded Farmland.
Nature of surrounding	Located within the Brentwood Hills (LLCA D2) with the River Wid to the north-east and the Weald Brook to the south-west. The Brentwood Hills LLCA is an area of high landscape value.
countryside	Thorndon Park is located to the south-east of Brentwood, and Weald Park is located to the north-west (both registered parks and gardens and Conservation Areas).
	The character of the surrounding landscape is one of gently to strongly undulating hills and ridges; semi-enclosed character with numerous small woods, large interlocking areas of woodland and frequent hedgerow trees; a patchwork of small irregular

Historic town na	Historic town name: Brentwood			
Principal characteristics	Assessment of characteristics and setting			
	pasture and arable fields, with some areas of medium to large arable fields; and a dense linear settlement pattern along the north-east to south-west transport routes.			
	Overall, the nature of the surrounding countryside is one of great time depth, with a range of historic field systems and woodlands.			
	The M25 passes to the south-west of Brentwood, on the eastern side of the Weald Brook, meeting a junction with the A12 and A1023 within the Green Belt c. 600m south-west of the town.			

**Table C.5 Brentwood Impact Assessment** 

Historic Town Name: Brentwood			
Principal characteristics	Impact of the Project on the principal characteristic		
Nature of urban fabric	The Project will not have any impact on this characteristic.		
Urban form	The Project will not have any impact on this characteristic.		
Archaeological resource	The Project will not have any impact on this characteristic.		
Relationship of urban form to countryside	The Project will not have any impact on this characteristic.		
Relationship of urban form to surrounding settlements	The Project will not have any impact on this characteristic.		
Views	The Project will not have any impact on this characteristic.		
Nature of surrounding countryside	The Project will not have any impact on this characteristic.		

## **Appendix D Assessment of Harm to Openness**

Table D.1 Change in spatial and visual openness

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
Group A: G12, G14 – G17	West Kent Downs (sub area Cobham) Istead Arable Farmlands	The HS1 corridor and associated planting forms a strong landscape boundary across the north of the Group A area, although there are visual links across it to the urban area of Gravesend and localised visual links to woodland in Shorne Woods Country Park. Other parcel boundaries are generally formed by existing road and rail corridors with varying degrees of definition.  Views in the east of the Group A area are across parkland within Cobham Hall Registered Park and Garden and open space within Jeskyns Community Woodland, with views sometimes constrained by woodland blocks such as Ashenbank Wood.  Further west, views are across open arable farmland, with	Construction: Minor harm  No construction compounds or Utilities Logistics Hubs (ULHs) would be located within the Group A area.  There would be no harm to the openness of the Green Belt within parcels G12 and G16 as a result of the Project, due to distance and the limited nature of construction activity near the parcels.  Within the remaining Group A area (parcels G14, G15 and G17), there would be minor harm to the visual openness of the Green Belt, which would not be significant. This would be due to vegetation removal and construction activity along the M2/A2 corridor and at the M2/A2/A122 Lower Thames Crossing junction, which would result in a perceptible change in the amount of built development and resulting perception of openness.  Year 1: Minor harm  Vegetation removal between the HS1 and A2 corridors and for OHL works within Jeskyns Community Woodland would result in a perceptible change in the amount of built development and resulting perception of openness, as highway infrastructure along the A2 corridor would be more apparent in parcels G14, G15 and G17, with OHL also more apparent in parcel G15.  Parts of the M2/A2/A122 Lower Thames Crossing junction would also be apparent in the neighbouring Group B Green Belt area, north of the A2 corridor. This would increase perception within the Group A area of built development encroachment within the wider Green Belt.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
		occasional woodland blocks providing limited enclosure.  Scattered farms and residential properties, including on the edges of settlements such as Sole Street and Cobham, form part of the surrounding rural landscape character within the Group A area.  The adjoining urban areas of Gravesend and Istead Rise are apparent from the western part of the Group A area, curtailing open views to the north-west and west.  Overhead lines (OHL) are a prominent built element, with HS1 and A2 infrastructure notable bordering the northern edge of the Group A area.  Woodland helps to soften the appearance of road and rail infrastructure within Cobham Hall Registered Park and Garden, however, the perception of overhead lines and transport infrastructure is greater within Jeskyns Community Woodland and arable farmland to the west.	Year 1 summary  There would be no harm to the openness of the Green Belt within parcels G12 and G16 as a result of the Project. Within the remaining Group A area (parcels G14, G15 and G17), there would only be minor harm to the openness of the Green Belt, which would not be significant.  Year 15: Minor to negligible harm  In the design year, established mitigation planting would reduce the perception of built development, as highway infrastructure, OHL and the M2/A2/A122 Lower Thames Crossing junction would be less apparent. The change to openness would be barely noticeable in most of Cobham Hall Registered Park and Garden (parcel G17) and within arable farmland to the west (parcel G14), however, some change would remain perceptible in parts of Jeskyns Community Woodland (parcel G15) resulting from highway infrastructure and OHL and the north-western edge of Cobham Hall Registered Park and Garden (parcel G17).  Year 15 summary  There would be no harm to the openness of the Green Belt within parcels G12 and G16 as a result of the Project. Within the remaining Group A area, there would only be minor or negligible harm to the openness of the Green Belt, which would not be significant. Minor harm would be localised to the northeastern edge of parcel G14, open areas of parcel G15 and the north-western edge of parcel G17.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
Group B: G6 – G11a	Higham Arable Farmland (sub area Gadshill)  Shorne Wooded Slopes  West Kent Downs (sub area Shorne)  Higham Arable Farmland (sub area Thong)  Gravesend Southern Fringe  Higham Arable Farmland (sub area Chalk)	The transport corridors of HS1 and the A226 Gravesend Road form well-defined landscape boundaries to the northern and southern edges of the Group B area. The urban area of Gravesend forms a strong landscape boundary to the west of the Group B area. The eastern landscape boundary of the Group B area is less well defined, partially formed by the urban area of Strood.  Views within the east of the Group B area are often contained by tree belts and woodland, such as within Shorne Woods County Park. There are some views across arable fields, although woodland still forms a notable backdrop. Glimpses of traffic and highway infrastructure are apparent along the M2/A2 and A289 corridors to the south and the A226 Gravesend Road to the north.  Woodland adjoining the M2/A2 corridor encloses views of prominent highway infrastructure	Construction: Major to negligible harm  There would be negligible harm to the openness of the Green Belt within parcel G9 as a result of the Project and minor harm within parcel G11, which would not be significant. This would be due to limited visibility of construction activity.  The A2 compound and construction activity for the Project to the west and south would form a noticeable change in the amount of built development and resulting perception of openness within parcel G8, and would indirectly result in temporary moderate harm to the openness of the Green Belt.  Park Pale Lane ULH and construction activity along the A2 corridor would form a noticeable change in the amount of built development and resulting perception of openness within parcel G10, and would temporarily result in moderate harm to the openness of the Green Belt.  Construction activity along the A2 corridor would form a dominant change in the amount of built development and resulting perception of openness within parcel G11a, and would temporarily result in major harm to the openness of the Green Belt.  Construction activity for the M2/A2/A122 Lower Thames Crossing junction and the A2 compound and A2 East and A2 West ULHs would form a dominant change in the amount of built development and resulting perception of openness within parcel G7, and would temporarily result in major harm to the openness of the Green Belt.  Construction activity for the South Portal, the approach road and the Chalk Park hilltop landform, in combination with the southern tunnel entrance compound, would form a dominant change in the amount of built development and resulting perception of openness within parcel G6, and would temporarily result in major harm to the openness of the Green Belt.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
		and associated traffic. The tree belt within the central reservation planting restricts views of the opposite carriageway. Glimpses of HS1 rail infrastructure and occasional passing trains are apparent through gaps in vegetation.  Views in the west part of the Group B area are across open arable fields and the former Southern Valley Golf Club, with occasional woodland blocks and tree belts providing limited enclosure. OHLs are prominent, with road and rail infrastructure also visible along the A2 and HS1 corridors to the south and traffic along the A226 Gravesend Road to the north.  Thong village and scattered residential properties along roads such as Peartree Lane and at the edges of Shorne form part of the generally rural landscape character within the Group B area.  The adjoining urban areas of Gravesend and Chalk are	Vegetation removal along the edges of the M2/A2 corridor and from within the central reservation would result in a noticeable change in the amount of built development and resulting perception of openness in parcel G11a, as the transport corridor would appear more urbanised due to increased visibility of highway infrastructure and traffic, and HS1 rail infrastructure would be more apparent in places. Vegetation removal along the A2 corridor would also increase visibility of road and/or rail infrastructure in parcels G8, G10 and G11, although in localised areas along the northern edge of the A2 corridor.  The new M2/A2/A122 Lower Thames Crossing junction would introduce prominent new earthworks and structures into the landscape, in the context of the existing A2 corridor to the south. The junction would result in a dominant change in the amount of built development and resulting perception of openness in parcel G7, due to prominent encroachment into the undeveloped landscape and the curtailment of some visual links to the wider Green Belt. The new M2/A2/A122 Lower Thames Crossing junction would also be apparent in parcel G8, although in localised areas along the west of the parcel.  The linear South Portal approach road cutting, in combination with the presence of the tops of highway infrastructure elements above the southern part of the cutting, would result in a noticeable change in the amount of built development and resulting perception of openness in parcel G6, reducing to a perceptible change with increased distance. The Chalk Park hilltop landform would curtail some visual links across the wider Green Belt in parcel G6, while at the same time increasing visual links to the wider Green Belt for recreational users on elevated land.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
		notable from the western part of the Group B area, curtailing open views to the west and north-west. The urban area of Strood is apparent in localised eastern parts of the Group B area.	There would be no harm to the openness of the Green Belt within parcel G9 as a result of the Project, negligible harm within parcel G11 and minor harm within parcel G10, which would not be significant.  Vegetation removal along the A2 corridor would result in moderate harm to the openness of the Green Belt within parcel G11a, given the presence of the existing road corridor. The new M2/A2/A122 Lower Thames Crossing junction would result in major harm to the openness of the Green Belt within parcel G7 and moderate harm in parcel G8. The South Portal approach road cutting would result in moderate harm to the openness of the Green Belt within parcel G6, reducing to minor harm with increased distance.  Year 15: Major to negligible harm  In the design year, established mitigation planting along the edges of the M2/A2 corridor and across Brewers Road green bridge and Thong Lane green bridge south would help to restore some visual enclosure of the highway corridor and soften the appearance of road and rail infrastructure. However, the Project would continue to result in a noticeable change in the amount of built development and resulting perception of openness in parcel G11a, due to increased urbanisation of the highway corridor.  Established mitigation planting between Park Pale and the A2 corridor and within the ancient woodland compensation site north-east of Park Pale would help to reduce visibility of road and rail infrastructure in parcel G10 to barely noticeable, with the detailed design ensuring key visual links are maintained to the wider Green Belt through the provision of open rides and glades. However, constraints to mitigation planting north of the A2 corridor due to utility easements would result in a continued perceptible indirect change in the amount of built development and resulting perception of openness in parcel G8.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
			In addition, glimpses of the M2/A2/A122 Lower Thames Crossing junction would remain apparent in parts of parcel G8.
			There would be no discernible change in parcel G11 due to established mitigation planting at the M2 junction 1.
			Established woodland at the M2/A2/A122 Lower Thames Crossing junction would screen some earthworks, structures and highway infrastructure. However, some elements of the junction would remain apparent above planting and there would be permanent encroachment into the undeveloped landscape, curtailment of visual links to the wider Green Belt and a dominant change.
			Established mitigation planting along the edge of the South Portal approach road cutting would largely screen the tops of highway infrastructure elements and soften the linear appearance of the cutting in parcel G6, resulting in a perceptible change in the amount of built development and resulting perception of openness. The Chalk Park hilltop landform would continue to curtail some visual links across the wider Green Belt in parcel G6, while at the same time increasing visual links for recreational users on elevated land.
			The detailed design would ensure established planting within the nitrogen deposition compensation sites in parcel G9 maintains visual links across the wider Green Belt, resulting in no discernible change of openness.
			Year 15 summary
			There would be no harm to the openness of the Green Belt within parcels G9 and G11 as a result of the Project, negligible harm within parcel G10 and minor harm within parcel G8, which would not be significant.
			Harm to the openness of the Green Belt within parcels G11a and G7 would be broadly the same as that described for Year 1, despite some improved integration of the Project into the landscape as a result of established mitigation planting.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness	
			The South Portal approach road cutting would result in minor harm to the openness of the Green Belt within parcel G6 after the establishment of mitigation planting.	
Group C:	Higham Arable	The River Thames defines the	Construction: Moderate to negligible harm	
G1 – G3	Farmland (sub area Chalk) Shorne and	landscape boundary to the north of the Group C area, with the A226 forming a well-defined landscape boundary to the south.	There would be minor harm to the openness of the Green Belt within parcel G1 and negligible harm in parcel G3, which would not be significant. This would be due to limited visibility of construction activity, including at the Milton compound in parcel G1.	
	Higham Marshes	Other parcel boundaries are generally bounded by existing road and rail corridors with varying degrees of definition.  Views within the Group C area are across open arable fields in the south and reclaimed marsh in the north. Vegetation cover is generally sparse, with limited enclosure in the landscape as a result.  Isolated farms and residential	generally bounded by existing road and rail corridors with varying degrees of definition.  Views within the Group C area are across open arable fields in	Construction activity at the A226 Gravesend Road compound and within the southern tunnel entrance compound in the Group B area would form a noticeable change in the amount of built development and resulting perception of openness within parcel G2, and would directly and indirectly result in temporary moderate harm to the openness of the Green Belt.
			Year 1 and year 15: Negligible harm	
			The only permanent proposals within the Group C area are ecology ponds and wet grassland habitat north of the Thames and Medway Canal, which would not result in any change in the amount of built development or visual links to the wider Green Belt, as the proposals would be in keeping with the existing	
	properties form part of the rural landscape character within the Group C area.  The adjoining urban areas of	landscape context.  The upper slopes of the South Portal approach road cutting in Group B to the south would be just apparent from part of the Group C area, resulting in an barely noticeable perception of built development encroachment into the		
		Gravesend and Chalk are notable from the western part of the Group C area, curtailing open views to the west.	undeveloped landscape. The Chalk Park hilltop landform would also be apparent from the Group C area, although it would not notably curtail visual links to the wider Green Belt and would be in keeping with the topography of the surrounding landscape.	

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
		OHLs are prominent, with visual links to industrial development along the north and south of the River Thames. Elements of the Milton Rifle Range are also apparent north of the linear corridor of the Thames and Medway Canal (disused) and the railway between Gravesend and Higham.	In the design year, the establishment of chalk grassland across the upper slopes of the South Portal approach road cutting in Group B to the south would provide some integration with the surrounding landscape, although a perception of built development encroachment would remain.  Year 1 and year 15 summary  There would be negligible harm to the openness of the Green Belt within parcels G1 – G3, which would not be significant.
Group D: T11, T25 - T35	Mucking Marshes  Tilbury Marshes  Chadwell Escarpment Urban Fringe  West Tilbury Urban Fringe  Linford/ Buckingham Hill Urban Fringe	The River Thames defines the landscape boundary to the south of the Group D area, with the A13 forming a well-defined landscape boundary to the north. The Tilbury Loop railway line and A1089 corridor form strong landscape boundaries to some parcels. Other parcel boundaries are generally formed by existing roads and settlement edges with varying degrees of definition. Views within the Group D area are across reclaimed marsh to the south and open arable fields to the north. Occasional woodland blocks limit views, such as those along the escarpment north of Tilbury	Construction: Major to negligible harm  There would be negligible harm to the visual openness of the Green Belt within parcels T11, T29, T31 and T32 as a result of the Project, which would not be significant. This would be due to limited visibility of construction activity.  Construction activity for the southern part of the A13/ A1089/A122 Lower Thames Crossing junction would form a noticeable change in the amount of built development and resulting perception of openness within parcel T28, and would directly and indirectly result in temporary moderate harm to the openness of the Green Belt.  Construction activity within adjacent parcel T34 would form a noticeable change in the amount of built development and resulting perception of openness within parcel T33, and would indirectly result in temporary moderate harm to the openness of the Green Belt.  Construction activity within adjacent parcel T34 would form a noticeable change in the amount of built development and resulting perception of openness within parcel T35, and would indirectly result in temporary moderate harm to the visual openness of the Green Belt.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
	White Croft/ Orsett Heath Urban Fringe	Marshes, at Tarmac Linford Blocks Plant and within Orsett Golf Course.  West Tilbury village and scattered farms and residential properties form part of the generally rural landscape character within the Group D area.  The adjoining urban areas of Tilbury, East Tilbury, Chadwell St Mary and Grays are notable from the Group D area, generally curtailing views to the west and to some extent to the east.  OHLs are prominent throughout the Group D area. Tilbury Docks, landfill operations and buildings at Readmans Industrial Estate and Thames Industrial Estate influence the southern part of the Group D area, with elevated highway infrastructure and associated traffic influencing the north. Buildings at Tarmac Linford Blocks Plant also have an influence on the area.	Construction activity at the North Portal and Tilbury Viaduct, in combination with the northern tunnel entrance compound and Station Road compound, would form a dominant change in the amount of built development and resulting perception of openness within parcels T30 and T34, and would temporarily result in major harm to the openness of the Green Belt.  Construction activity along the Project route, in combination with the Stanford Road ULH, would form a noticeable change in the amount of built development and resulting perception of openness within parcel T25, and would temporarily result in moderate harm to the openness of the Green Belt.  Construction activity for the southern part of the A13/ A1089/A122 Lower Thames Crossing junction, in combination with the Brentwood Road compound, Stanford Road compound, Long Lane compounds A and B, Brentwood Road ULH, Hornsby Lane ULH and Long Lane ULH would form a dominant change in the amount of built development and resulting perception of openness within parcels T26 and T27, and would temporarily result in major harm to the openness of the Green Belt.  Year 1: Major harm to no change  The introduction of the Project route into the southern part of the Group D area, in particular earthworks associated with the North Portal operational access bridge and the Tilbury Viaduct structure, would result in a dominant change in the amount of built development and resulting perception of openness in parcels T30 and T34. This would be due to the prominent encroachment of built development, albeit in an area that has been subject to modification, and the curtailment of some visual links to the wider Green Belt. Sculptural landscape mounding within Tilbury Fields would also curtail some visual links to the wider Green Belt, although its open landscape character would not result in a notable perception of built development encroachment. In addition, the mounding would

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
			create visual links to the wider Green Belt by providing more elevated areas in the existing low-lying landform.  Further north, false cuttings along the Project route would largely screen views of the new carriageway and associated traffic, although some highway infrastructure would be apparent above the false cuttings. While the false cuttings would curtail some visual links to the wider Green Belt, they would also reduce the perception of built development encroachment. As a result, there would be a noticeable change in the amount of built development and resulting perception of openness in parcel T25.  The expansion of the existing A13/A1089 junction including new earthworks, viaducts and landscape mounds would result in a dominant change in the amount of built development and resulting perception of visual openness in parcels T26 and T27, due to the increased urbanisation of the area and curtailment of some visual links to the wider Green Belt, although the landscape mounds would help to limit the perception of built development encroachment. Some of the modifications at the existing junction would extend into the northern part of parcel T28, resulting in direct and indirect perceptible change in the amount of built development and resulting perception of openness.  Sculptural landscape mounding at Tilbury Fields and parts of the Project route would be apparent from parcels T33 and T35, although this would result in an barely noticeable perception of built development encroachment and curtailing of visual links to the wider Green Belt. Habitat creation works within parcel T35 would be in keeping with the existing landscape context.  There would be no permanent proposals within parcels T11, T29, T31 and T32 and the Project route would not be discernible.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
			Year 1 summary
			There would be no harm to the openness of the Green Belt within parcels T11, T29, T31 and T32 as a result of the Project, negligible harm within parcels T33 and T35 and minor harm within parcel T28, which would not be significant.
			The presence of new earthworks at and to the north of the North Portal and the Tilbury Viaduct structure would result in major harm to the openness of the Green Belt within parcels T30 and T34. The presence of the Project route would result in moderate harm to the openness of the Green Belt within parcel T25. Modifications to the existing A13/A1089 junction would result in major harm to the openness of the Green Belt within parcels T26 and T27.
			Year 15: Major harm to no change
			In the design year, established mitigation planting on the North Portal operational access bridge earthworks, along parts of the Project route and at the A13/A1089/A122 Lower Thames Crossing junction would help to screen some views of earthworks, highway infrastructure and traffic and soften the appearance of structures. In addition, mitigation planting at Muckingford Road, Hoford Road and Brentwood Road green bridges would help to soften the appearance of road infrastructure. However, changes in the amount of built development and resulting perception of openness would remain as described at year 1, due to permanent built development encroachment and curtailment of some visual links to the wider Green Belt.
			Year 15 summary
			Harm to the openness of the Green Belt would be broadly the same as that described for Year 1, despite some improved integration of the Project into the landscape as a result of established mitigation planting.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
T12 – T18, T20, T40, T41 H7 – H11  Note: Parcels T13/H10, T14/H9, T15/H8, and T16/H7 are the same shared parcels (Thurrock Borough Council and London Borough of Havering)	Orsett Lowland Farmland  Thurrock Reclaimed Fen (sub area Mardyke)  Belhus Lowland Quarry Farmland	The A13, M25 and A128 road corridors form strong landscape boundaries to the south, west and east respectively, with the Upminster to Basildon railway forming a well-defined landscape boundary to the north. Other parcel boundaries are generally formed by existing roads and settlement edges with varying degrees of definition.  Views within the Group E area are across open reclaimed fenland north of the A13 and open arable fields further to the west, with intermittent woodland blocks and tree belts limiting views in places such as along the Mar Dyke and at The Wilderness.  North Ockendon village and scattered farms and residential properties form part of the rural landscape character within the Group E area. There is limited development within the fenland north of the A13 corridor, although OHLs, landfill operations and newly-	Construction: Major to negligible harm  There would be negligible harm to the openness of the Green Belt within parcels T12, T17, T20 and T40 as a result of the Project and minor harm within parcel T13/H10, which would not be significant. This would be due to limited visibility of construction activity.  Construction activity for the Project route and the M25/A122 Lower Thames Crossing junction would form a noticeable change in the amount of built development and resulting perception of openness within parcel T18, and would indirectly result in temporary moderate harm to the openness of the Green Belt.  Construction activity along the M25 corridor would form a noticeable change in the amount of built development and resulting perception of openness within parcel H11, and would temporarily result in moderate harm to the openness of the Green Belt.  Construction activity for the northern part of the A13/ A1089/A122 Lower Thames Crossing junction and along the A13 corridor would form a noticeable change in the amount of built development and resulting perception of openness within parcel T41, and would temporarily result in moderate harm to the openness of the Green Belt.  Construction activity for the northern part of the A13/ A1089/A122 Lower Thames Crossing junction and the Project route to the north, in combination with the Stifford Clays Road compounds East and West, Mardyke compound, Stifford Clays Road ULH, Green Lane ULH and Medebridge ULH, would form a dominant change in the amount of built development and resulting perception of openness within parcel T14, and would temporarily result in major harm to the openness of the Green Belt.  Construction activity along the Project route and at the M25/A122 Lower Thames Crossing junction, in combination with the Medebridge compound, would form a noticeable change in the amount of built development and

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
		constructed solar panels are notable features. Traffic and highway infrastructure are apparent along the A13 corridor to the south and the M25 corridor to the west.  The adjoining urban areas of South Ockendon and Orsett are apparent from the Group E area, generally curtailing open views to the south-west and some to the south-east.	resulting perception of openness within parcels T15/H8 and T16/H7, and would temporarily result in moderate harm to the openness of the Green Belt.  Year 1: Major harm to no change  The expansion of the existing A13/A1089 junction including new earthworks, structures and landscape mounding, in combination with the embankments and Orsett Fen and Mardyke Viaducts along the Project route within reclaimed fenland to the north of the A13 corridor would result in a dominant change in the amount of built development and resulting perception of openness in parcel T14/H9. This would be due to the increased urbanisation of the area, the introduction of built development into the reclaimed fenland and curtailment of some visual links to the wider Green Belt, although the landscape mounds would help to limit the perception of built development encroachment.  Some of the modifications at the existing A13/A1089 junction would extend into the southern part of parcel T41, resulting in a noticeable change in the amount of built development and resulting perception of openness.  East of the existing M25 corridor, cuttings, false cuttings and landscape mounds along the Project route would result in views of the new carriageway and associated traffic being largely screened, although some highway infrastructure would be apparent. While the false cuttings and landscape mounds would curtail visual links to the wider Green Belt in places, they would also limit the perception of built development encroachment. As a result, there would be a noticeable change in the amount of built development and resulting perception of openness in parcels T15/H8 and T16/H7.  Earthworks along the Project route and the new FP252 WCH bridges East and West would be apparent from parcel T18, resulting in an indirect perceptible change in the amount of built development and resulting perception of openness.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
			Vegetation removal along the M25 corridor would increase visibility of traffic and highway infrastructure in parcel H11, resulting in increased urbanisation of the motorway corridor and a perceptible change in the amount of built development and resulting perception of openness. The increased urbanisation of the motorway corridor would, to a lesser degree, also be apparent in adjacent parcel T13/H10, resulting in an indirect barely noticeable change in the amount of built development and resulting perception of openness.  There would be no permanent proposals within parcels T12, T17, T20 and T40 and the Project route would not be discernible.
			Year 1 summary
			There would be no harm to the openness of the Green Belt within parcels T12, T17, T20 and T40 as a result of the Project, negligible harm within parcel T13/H10 and minor harm within parcels T18 and H11, which would not be significant.
			Modifications to the existing A13/A1089 junction would result in moderate harm to the openness of the Green Belt within parcel T41. The combination of modifications to the existing A13/A1089 junction and earthworks along the Project route to the north would result in major harm to the openness of the Green Belt within parcel T14/H9. The presence of the Project route would result in moderate harm to the openness of the Green Belt within parcels T15/H8 and T16/H7.
			Year 15: Major harm to no change
			In the design year, established mitigation planting at the A13/A1089/A122 Lower Thames Crossing junction would help to screen earthworks, traffic and highway infrastructure. This would reduce the change in the perception of built development and openness in parcels T40 and T14/H9. However, the

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
			embankments and Orsett Fen and Mardyke Viaducts in parcel T14/H9 would remain prominent in the reclaimed fenland north of the A13 corridor, although mitigation planting at Green Lane green bridge would help to soften the appearance of road infrastructure.
			Established mitigation planting along the Project route east of the M25 corridor would soften the appearance of earthworks and highway infrastructure in parcels T15/H8 and T16/H7. In addition, mitigation planting at North Road green bridge would help to soften the appearance of road infrastructure. However, changes in the amount of built development and resulting perception of openness would remain as described at year 1, due to permanent built development encroachment and curtailment of some visual links to the wider Green Belt.
			The M25 corridor would not appear notably different to existing once mitigation planting has established, reducing the change in the perception of built development and openness in parcels T13/H10 and H11.
			Year 15 summary
			There would be no harm to the openness of the Green Belt within parcels T12, T13/H10, T17, T20 and T40 as a result of the Project, negligible harm within parcel H11 and minor harm within parcels T18 and T41, which would not be significant.
			Harm to the openness of the Green Belt within parcels T14/H9, T15/H8 and T16/H7 would be broadly the same as that described for Year 1, despite some improved integration of the Project into the landscape as a result of established mitigation planting.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
Group F: T24 H5, H6  Note: Parcel T24/H5 is the same shared parcel (Thurrock Borough Council and London Borough of Havering)	Belhus Lowland Quarry Farmland  Thurrock Reclaimed Fen (sub area Thames Chase)	The M25 corridor and associated planting forms a strong landscape boundary across the east of the Group F area. Other parcel boundaries are generally formed by existing road corridors and settlement edges with varying degrees of definition.  Views within the Group F area are across a variety of land uses including recreational land at Thames Chase Forest Centre and Belhus Woods Country Park, arable fields scattered with numerous woodland blocks and Cranham Golf Course. The Group F area is generally well wooded, resulting in limited views in places and strong enclosure.  There are scattered farms and residential properties within the Group F area that form part of the surrounding rural landscape character, however, some farm units have developed into more industrial or commercial uses.  The adjoining urban areas of Upminster and Aveley are apparent from the Group F area,	Construction: Moderate to minor harm  There would be minor harm to the openness of the Green Belt within parcel T24/H5, which would not be significant. This would be due to limited visibility of construction activity.  Construction activity at the M25/A122 Lower Thames Crossing junction, in combination with the Ockendon Road compound, would form a noticeable change in the amount of built development and resulting perception of openness within parcel H6, and would temporarily result in moderate harm to the openness of the Green Belt.  Year 1: Moderate to negligible harm  A cutting along the Project route at the M25/A122 Lower Thames Crossing junction would result in views of the new carriageway and associated traffic being largely screened to the north and south of Ockendon Road, although some highway infrastructure would be apparent and structures such as the Ockendon Road overbridge and the new Thames Chase Footbridge would form notable elevated features. Landscape mounds would screen the M25 corridor and would help to limit the perception of built development encroachment.  Further north, vegetation removal at Thames Chase Forest Centre would increase visibility of the existing M25 corridor, with new slip roads prominent on embankment. There would be a noticeable change in the amount of built development and resulting perception of openness in parcel H6.  The Project route in adjacent parcel H6 would be partially apparent from some of parcel T24/H5, resulting in an barely noticeable perception of built development encroachment into the undeveloped landscape.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
		generally curtailing open views to the north-west and south.  OHLs are apparent and traffic and highway infrastructure are prominent along the M25 corridor at the eastern edge of the Group F area.	There would be negligible harm to the openness of the Green Belt within parcel T24/H5, which would not be significant.  The M25/A122 Lower Thames Crossing junction would result in moderate harm to the visual openness of the Green Belt within parcel H6.  Year 15: Moderate harm to no change In the design year, established mitigation planting at the M25/A122 Lower Thames Crossing junction would help to screen highway infrastructure along the Project route, soften the appearance of bridge structures and landscape mounds and restore screening of the existing M25 corridor. This would result in the Project route not being discernible in parcel T24/H5. However, built development encroachment would remain readily apparent in parcel H6.  Year 15 summary  There would be no change to the openness of the Green Belt within parcel T24/H5.  Harm to the openness of the Green Belt within parcel H6 would be broadly the same as that described for Year 1, despite some improved integration of the Project into the landscape as a result of established mitigation planting.
<b>Group G:</b> H12, H14	Thurrock Reclaimed Fen (sub area Thames Chase)	The M25 corridor is a well-defined landscape boundary to the east of the Group G area, with the A127 forming a strong landscape boundary between parcels H12 and H14. Other parcel boundaries are generally	Construction: Minor harm  There would be minor harm to the openness of the Green Belt within parcels H12 and H14, which would not be significant. This would be due to construction activity associated with the M25 and A127 corridors, M25 junction 29 and Folkes Lane ULH in parcel H14, in the context of the existing road corridors.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
	Brentwood Wooded Hills	formed by existing road corridors and settlement edges with varying degrees of definition.  Views within the Group G area are across arable and pasture fields and areas used recreationally within Thames Chase such as Folkes Lane Woodland and Pages Wood.  Woodland and tree belts are prominent, providing a high degree of enclosure and limiting views within the Group G area.  Scattered farms, residential properties and industrial/ commercial units contribute to the semi-rural character.  The adjoining urban areas of Upminster and Harold Wood are apparent from the Group G area, generally curtailing open views to the west.  Traffic and highway infrastructure are prominent along the M25 corridor at the eastern edge of the Group G area and along the A127 between parcels H12 and H14. OHLs are apparent parallel to the A127.	Vegetation removal along the M25 and A127 corridors would result in slightly increased visibility of traffic and highway infrastructure and a barely noticeable change in the amount of built development and resulting perception of openness in parcels H12 and H14.  Year 1 summary There would be negligible harm to the openness of the Green Belt within parcels H12 and H14, which would not be significant.  Year 15: No change In the design year, established mitigation planting would restore a similar level of screening to existing along the M25 and A127 corridors, resulting in no discernible change in the amount of built development and resulting perception of openness in parcels H12 and H14.  Year 15 summary There would be no change to the openness of the Green Belt within parcels H12 and H14.
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	Existing spatial and visual openness description	Change in spatial and visual openness
B22 – B26  Reclaimed Fen (sub area Mardyke)  Brentwood Wooded Hills  Reclaimed Fen (sub area Mardyke)  Brentwood Wooded Hills  Reclaimed Fen (sub area Mardyke)  It is	The M25 corridor forms a strong landscape boundary across the west of the Group H area with the Upminster to Basildon railway forming a well-defined landscape boundary to the south. Other parcel boundaries are generally formed by existing road corridors and settlement edges with varying degrees of definition.  Views in the Group H area are across arable and pasture fields with a high concentration of woodland blocks and tree belts that limit views in places. Other land uses include industrial units at Codham Hall Farm and Upminster Trading Park, Warley Park Golf Club and recreational areas such as Brentwood Leisure Park.  Scattered farms and residential properties form part of the semirural character. Larger settlements are not readily apparent within the Group H area due to intervening vegetation.  Traffic and highway infrastructure are prominent along the M25	Construction: Minor harm  There would be negligible harm to the openness of the Green Belt within parcels B22, B23 and B26 and minor harm within parcels B24 and B25, which would not be significant. This would be due to construction activity associated with the M25 and A127 corridors, M25 junction 29 and Beredens Lane ULH in parcel B25, in the context of the existing road corridors.  Year 1: Negligible harm  Vegetation removal along the M25 corridor would result in slightly increased visibility of traffic and highway infrastructure and a barely noticeable change in the amount of built development and resulting perception of openness in parcels B24 and B25.  There would be no permanent proposals within parcels B22, B23 and B26 and changes along the M25 corridor would not be discernible.  Year 1 summary  There would be no harm to the openness of the Green Belt within parcels B22, B23 and B26 and negligible harm within parcels B24 and B25, which would not be significant.  Year 15: No change  In the design year, established mitigation planting would restore a similar level of screening to existing along the M25 corridor. Detailed design would ensure established planting within the ancient woodland and nitrogen deposition compensation sites in parcel B25 maintains visual links across the wider Green Belt.

Parcel group	Equivalent Local Landscape Character Areas (LLCAs)	Existing spatial and visual openness description	Change in spatial and visual openness
		corridor at the western edge of the Group H area and along the A127. Industrial units at Codham Hall Farm are also notable.	As a result, there would be no discernible change in the amount of built development and resulting perception of openness in parcels B24 and B25.  Year 15 summary  There would be no change to the openness of the Green Belt within parcels B22 – B26.

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## **Glossary**

Term	Abbreviation	Explanation
A122		The new A122 trunk road to be constructed as part of the Lower Thames Crossing project, including links, as defined in Part 2, Schedule 5 (Classification of Roads) in the draft DCO (Application Document 3.1)
A122 Lower Thames Crossing	Project	A proposed new crossing of the Thames Estuary linking the county of Kent with the county of Essex, at or east of the existing Dartford Crossing.
A122 Lower Thames Crossing/M25 junction		New junction with north-facing slip roads on the M25 between M25 junctions 29 and 30, near North Ockendon.
		Alteration of the existing junction between the A13 and the A1089, and construction of a new junction between the A122 Lower Thames Crossing and the A13 and A1089, comprising the following link roads:
		Improved A13 westbound to A122 Lower Thames     Crossing southbound
		Improved A13 westbound to A122 Lower Thames     Crossing northbound
A13/A1089/A122		Improved A13 westbound to A1089 southbound
Lower Thames Crossing junction		A122 Lower Thames Crossing southbound to improved     A13 eastbound and Orsett Cock roundabout
		A122 Lower Thames Crossing northbound to improved     A13 eastbound and Orsett Cock roundabout
		Orsett Cock roundabout to the improved A13 westbound
		Improved A13 eastbound to Orsett Cock roundabout
		<ul> <li>Improved A1089 northbound to A122 Lower Thames Crossing northbound</li> </ul>
		Improved A1089 northbound to A122 Lower Thames     Crossing southbound
A2		A major road in south-east England, connecting London with the English Channel port of Dover in Kent.
Application Document		In the context of the Project, a document submitted to the Planning Inspectorate as part of the application for development consent.
Construction		Activity on and/or offsite required to implement the Project. The construction phase is considered to commence with the first activity on site (e.g. creation of site access), and ends with demobilisation.
Design Manual for Roads and Bridges	DMRB	A comprehensive manual containing requirements, advice and other published documents relating to works on motorway and all-purpose trunk roads for which one of the Overseeing Organisations (National Highways, Transport Scotland, the Welsh Government or the Department for Regional Development (Northern Ireland)) is highway authority. For the A122 Lower Thames Crossing the Overseeing Organisation is National Highways.
Development Consent Order	DCO	Means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects (NSIP) under the Planning Act 2008.

Term	Abbreviation	Explanation
Development Consent Order application	DCO application	The Project Application Documents, collectively known as the 'DCO application'.
Environmental Statement	ES	A document produced to support an application for development consent that is subject to Environmental Impact Assessment (EIA), which sets out the likely impacts on the environment arising from the proposed development.
Highways England		Former name of National Highways.
M2 junction 1		The M2 will be widened from three lanes to four in both directions through M2 junction 1.
M2/A2/Lower Thames Crossing junction		New junction proposed as part of the Project to the east of Gravesend between the A2 and the new A122 Lower Thames Crossing with connections to the M2.
M25 junction 29		Improvement works to M25 junction 29 and to the M25 north of junction 29. The M25 through junction 29 will be widened from three lanes to four in both directions with hard shoulders.
National Highways		A UK government-owned company with responsibility for managing the motorways and major roads in England. Formerly known as Highways England.
National Planning Policy Framework	NPPF	A framework published in March 2012 by the UK's Department of Communities and Local Government, consolidating previously issued documents called Planning Policy Statements (PPS) and Planning Practice Guidance Notes (PPG) for use in England. The NPPF was updated in February 2019, July 2021 and September 2023 by the Ministry of Housing, Communities and Local Government.
National Policy Statement	NPS	Set out UK government policy on different types of national infrastructure development, including energy, transport, water and waste. There are 12 NPS, providing the framework within which Examining Authorities make their recommendations to the Secretary of State.
National Policy Statement for National Networks	NPSNN	Sets out the need for, and Government's policies to deliver, development of Nationally Significant Infrastructure Projects (NSIPs) on the national road and rail networks in England. It provides planning guidance for promoters of NSIPs on the road and rail networks, and the basis for the examination by the Examining Authority and decisions by the Secretary of State.
Nationally Significant Infrastructure Project	NSIP	Major infrastructure developments in England and Wales, such as proposals for power plants, large renewable energy projects, new airports and airport extensions, major road projects etc that require a development consent under the Planning Act 2008.
North Portal		The North Portal (northern tunnel entrance) would be located to the west of East Tilbury. Emergency access and vehicle turn-around facilities would be provided at the tunnel portal. The tunnel portal structures would accommodate service buildings for control operations, mechanical and electrical equipment, drainage and maintenance operations.
Operation		Describes the operational phase of a completed development and is considered to commence at the end of the construction phase, after demobilisation.

Term	Abbreviation	Explanation
Order Limits		The outermost extent of the Project, indicated on the Plans by a red line. This is the Limit of Land to be Acquired or Used (LLAU) by the Project. This is the area in which the DCO would apply.
Planning Act 2008		The primary legislation that establishes the legal framework for applying for, examining and determining Development Consent Order applications for Nationally Significant Infrastructure Projects.
Project road		The new A122 trunk road, the improved A2 trunk road, and the improved M25 and M2 special roads, as defined in Parts 1 and 2, Schedule 5 (Classification of Roads) in the draft DCO (Application Document 3.1).
Project route		The horizontal and vertical alignment taken by the Project road.
South Portal		The South Portal of the Project (southern tunnel entrance) would be located to the south-east of the village of Chalk. Emergency access and vehicle turn-around facilities would be provided at the tunnel portal. The tunnel portal structures would accommodate service buildings for control operations, mechanical and electrical equipment, drainage and maintenance operations.
The tunnel		Proposed 4.25km (2.5 miles) road tunnel beneath the River Thames, comprising two bores, one for northbound traffic and one for southbound traffic. Cross-passages connecting each bore would be provided for emergency incident response and tunnel user evacuation. Tunnel portal structures would accommodate service buildings for control operations, mechanical and electrical equipment, drainage and maintenance operations. Emergency access and vehicle turn-around facilities would also be provided at the tunnel portals.

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